THE LANCET.

VOL. II.] LONDON, SATURDAY, MAY 26, 1838. [1837-8.

LECTURES
ON THE
THEORY AND PRACTICE OF MEDICINE;
NOW IN COURSE OF DELIVERY AT THE
THEATRE OF ANATOMY AND MEDICINE, WEBB-STREET, SOUTHWARK.
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&c., &c.

INSIDIOUS DISEASES OF THE CHEST:—*History, symptoms, and pathology of ulceration of the larynx.* TUBERCLES:—*Symptoms; local signs; complications of phthisis; selections from M. Louis' manuscript; changes which tubercles undergo; hæmoptysis; dyspnœa; pain, fever, and diarrhœa. Lesions of the mucous membrane. Melanosis and encephalosis of the lung. Symptomatic affections.*

GENTLEMEN:—Having described the *acute* and the *chronic* diseases of the lungs, I now proceed to treat of that sad and calamitous disease which is so generally characterised by its *insidious* character, viz., PHTHISIS.

I have already, in treating of *tubercle*, laid before you that part of the manuscript confided to me by M. Louis, which treats of the *morbid anatomy*; I shall on the present occasion have to introduce to you M. Louis's observations relative to the *symptoms* and *diagnosis* of this disease.

I must take this opportunity of repeating to you my unbounded admiration of M. Louis's labours. I regard him as, without exception, and without comparison, the first physician of this or any age, and of any nation. His character I may designate as truly English, in the best sense of that word, and as *very* unlike that of certain editors of certain journals. M. Louis is *a lover of truth*. He is conscientious, nay, scrupulous, in all that he does. His cases may claim your most implicit confidence, as being taken with the strictest attention to correctness, and his deductions and statements, as being made with the strictest attention to accuracy and truth. His *method* is *the basis* upon which the science of medicine must henceforth be founded; to observe, to collect facts; to analyse, to compare these facts, and to deduce from them numerical results;—such is M. Louis's system. But then who can observe, as M. Louis observes, who can analyse as he analyses? The unwearied industry, the unexampled care and caution of this extraordinary man, may serve us as models for our imitation, however, whilst we freely confess that we despair of doing more.

I shall begin the subject by my usual brief detail of the *causes, symptoms, diagnosis*, and *treatment*, and I shall then subjoin M. Louis's remarks.

INSIDIOUS DISEASES.

I.—ULCERATION OF THE LARYNX, &c.

1. *The History.*—This affection is of the most insidious character, and generally occurs without any obvious external cause.

2. *The Symptoms* of ulceration of the larynx are hoarseness and hoarse cough, with the expectoration of mixed, limpid, and puriform mucus, frequently dotted or streaked with blood. The hoarseness, cough, and expectoration augment. Difficulty or imperfection in swallowing is added to the other symptoms; the patient frequently becomes choked in the act of deglutition, or the food is propelled through the nostrils.

Hectic and emaciation eventually take place, frequently with all the symptoms of phthisis.

3. The most important *diagnosis* in practice is that between ulceration and chronic inflammation of the larynx; the former is always *tuberculous*, or syphilitic; in ulceration there are loss of voice, hoarseness, hoarse cough, imperfect deglutition, frequent pulse, *hectic;* in inflammation, a sense of constriction, croupy cough, attacks of dyspnœa, &c.

4. *The Morbid Anatomy* combines ulcerative destruction of some parts of the larynx, with tubercles of the lungs, and frequently of other organs.

II.—TUBERCLES.

1. *The History.*—Phthisis is usually very insidious, slow, and gradual in its progress

and termination. In other instances its commencement and progress are more rapid, and its termination may be sudden and unexpected in any period of its course. The exciting causes are sometimes undetected; in other instances exposure to cold, the debility left by some acute disease, by mercury, &c., are its obvious causes. Phthisis is distinctly an hereditary or family disease; it is also an effect of scanty or impure nourishment.

2. *The Symptoms.*—The general symptoms of tuberculous diseases have been already fully detailed, and the local symptoms of phthisis. To the account there given I may add, that a slight cough, a slight shortness of breath on moving quickly or ascending the stairs,—an expectoration with a *dot* or *streak* of blood,—a little appearance of pallor, or thinness,—a pulse of 90 when the patient is asleep, or at least quiet in bed, are, with hereditary predisposition, a glandular enlargement, &c., amongst the first symptoms of this insidious disease, any one of which should *excite* our immediate attention, if not our alarm.

The Local Signs vary with the stage and state of the pulmonary disease. This may subsist in the following forms :—

a. Tubercles.
1. *Crude.*
2. *Softened.*

b. Excavation.
1. *Small.*
2. *Large.*
3. *Superficial.*
4. *Deep-seated.*
5. *Bursting into*
1. *The Bronchia,*
2. *The Pleura.*

1. In accumulations of the crude tubercles, there is occasionally a perceptible diminution of sound on percussion, and diffuse bronchophony, especially immediately under the clavicle and in the axilla, and especially on the right side.

2. As the tubercles soften a gurgling is heard, a mucous rattle is gradually established, and the cough becomes cavernous.

As a cavity forms, and becomes emptied, the respiration and rattle become cavernous, and the bronchophony passes into pectoriloquy, at first imperfect, and then more evident; and the sound of the chest may sometimes, though but rarely, become clearer. Pectoriloquy is a most distinct diagnostic; it may be perfect, imperfect, or doubtful, intermitting or permanent. When the cavity is superficial, there is sometimes the sound of cracked porcelain,—the "bruit de pot fêlé."

When the cavity is extremely large there is no pectoriloquy; but the voice, cough, and respiration are attended by the amphoric resonance, and sometimes there is the metallic tinkling.

When the cavity suddenly bursts into the bronchia, there is the sudden expectoration of a large quantity of puriform fluid; when it bursts into the cavity of the pleura there is frequently sudden, acute pleuritis, and, more remotely, pneumothorax.

3. *The Complications* of phthisis present a most interesting subject for enumeration; they may be divided into several classes. The *first* is nearly peculiar to phthisis, and embraces—

1. *Ulcerations of the epiglottis, the larynx, and the trachea;*
2. *Ulcerations of the clustered and solitary glands of the ileum and colon;*
3. *The fatty enlargement of the liver.*

The *second* class consists of lesions which are only extremely frequent, and not peculiar to phthisis; they are—

1. *Pleuritis.*
2. *Pneumonia.*

There is a *third* class of complications of phthisis, less frequent; this consists of—

1. *Inflammation of the arachnoid, or of the substance of the brain, with effusion, or softening.*
2. *Inflammation and softening of the mucous membrane of the stomach, or colon.*

The *fourth* consists of—

1. *Tuberculous inflammation of the pleura, peritoneum, &c.*
2. *Tuberculous inflammation of the lymphatic glands, especially the mesenteric, those of the neck, &c.*

The *fifth* class consists of—

Serous effusions into—1. *The ventricles.*
2. *The pleura.*
3. *The pericardium.*
4. *The peritoneum.*

To complete the view of this subject, it is necessary to add that the heart is sometimes softened, and that the aorta is found red in the young, and more deeply altered in older subjects.

This list of the complications will enable the young physician to anticipate, and to obviate lesions which may, even amidst a disease almost always fatal in itself, fearfully tend to shorten the patient's few remaining days.

Here I introduce

M. LOUIS'S MANUSCRIPT,

(*Continued from Vol. I., p.* 282—290.)

"Of 114 patients affected with phthisis, in whom the duration of the malady had been ascertained as exactly as possible, a little more than one-fifth died between the first and the sixth month of the affection; two-sixths between the sixth and the twelfth month; a little less than one-fourth between the termination of the first and second years, and a little less than one-fifth between the second and the twentieth.

"The age of the patient does not appear to have any influence on the course of the disease, except, indeed, in the cases of acute

phthisis, but the influence of the sex appears indubitable, a somewhat greater number of females than of males dying within the first year.

"The violence and frequency of the pulse are generally proportionate to the rapidity with which the disease proceeds.

"The transition from the state of crudity of the tubercles to that of their softening and their expectoration, is denoted by a remarkable change in the appearance of the sputa. From being mucous and more or less frothy, they become opaque, greenish, free from air-bubbles, and striated with yellow lines, in greater or less number. These lines, and the fragments of whitish matter ('grumeaux') which accompany them, disappear after a time. The sputa then become homogeneous, and assume a round form, and are heavy and more or less consistent, and yet do not always sink in water; then fifteen or twenty days before death, but sometimes only four or five, the sputa assume a grayish and dirty aspect, similar to that found in old tubercular excavations, are sometimes mixed with blood, and form a sort of puriform matter.

"These characters of the expectoration were observed in all the patients submitted to my observation except three, in whom the sputa were constantly mucous, frothy, whitish, or very slightly yellow or gray, semi-transparent, without having ever assumed the form of distinct portions.

"In the first period of the disease, when the sputa were mucous and frothy, and when there was neither gurgling nor pectoriloquy, in a word no excavation, they could only proceed from the bronchia; later in the disease they were at once formed of the bronchial secretion and of the matter contained in the cavities. The alteration in their character announces, with gurgling and pectoriloquy, the softening of the tubercles, and their communication with the bronchia. The violent inflammation of the bronchial membrane at this period of the disease, also contributes, with the secretion of the parietes of the cavities, to the change in the expectoration, rendering it opaque, greenish, and grayish.

"*Hæmoptysis* took place in a greater or less degree, in two-thirds of the patients, or in 57 cases out of 87; 25 cases out of the 57 had hæmoptysy in a violent form. In its severe, or less severe degree, this symptom sometimes precedes the cough and the expectoration a more or less considerable time; 12 of the 57 cases, or about one-fifth, presented this phenomenon.

"Severe hæmoptysis is rare in the last days of the disease, so that I have only observed it four times in this period.

"The hæmoptysis, especially the severe form of it, which precedes the cough, must be considered not as preceding, but as denoting the existence of tubercles; for, with very rare exceptions, violent hæmoptysis is peculiar to the tuberculous subject. The hæmoptysis which precedes the other symptoms of phthisis, is sometimes accompanied by dyspnœa; they take place suddenly, in the midst of apparent health, and without assignable cause.

"Hæmoptysis is more frequent in the female than in the male sex, in the proportion of 3 to 2. The relation of age to hæmoptysis is not the same in the two sexes; it was absent in the third part of the female patients between the ages of 19 and 20; and in the seventh part only of those between 40 and 65,—an event the reverse of that which would have existed if this symptom had been, according to the opinion of some physicians, vicarious of the catamenia. In the men this symptom was equally frequent before and after the age of 40.

"Age seems to be without influence in reference to the degree of the hæmoptysis.

"Hæmoptysis rarely recurs three or four or more times in the course of the disease.

"The *dyspnœa* pursues the course of the original disease, and is rarely excessive, so that I have only seen three patients who were compelled to have their head or their chest raised.

"*Pain* existed in a variable degree and locality in the majority of the cases, so that 22 only, out of 110, were entirely without it. This pain, in the greatest number of cases, was proportioned to the adhesions between the pleuræ, and generally to the number and size of the cavities. This pain has generally the character of that in pleuritis.

"*Fever* began with the first symptoms in one-fifth of the cases in which it was presumable that the lungs were the sole seat of disease. One-sixth of the cases were without *rigor*, being only attended with an unusual sensitiveness to cold. In another sixth, rigors returned every evening, rarely at any other hour. If they are sufficiently severe to require quinine they recur, sooner or later, after having been suspended. *Perspirations* were absent in one-tenth of the cases in which there were rigors, occur sometimes without rigors, and almost always in the night and during sleep. They coincide generally with diarrhœa, which is sometimes also very severe. These two symptoms are not, either in phthisis, or in other diseases, in an inverse proportion to each other, as some physicians have alleged.

"*Diarrhœa* is so common that it was absent only 5 times in 112 cases; in one-eighth part of the patients it began with the disease, and continued till death,—a space of from 5 to 12 months. In the greater number of cases it begins in the second stage of the disease, and in one-fourth, from 5 to 20 days before death. In these last cases the ulcerations are almost always small, and the mucous membrane of the large intestine soft

as mucus, and almost always red—a sign of recent and intense inflammation.

"Diarrhœa, long-continued, may be incessant or remittent; the *latter* form may continue from six weeks to fifteen months, and is accompanied by the same lesions as that which supervenes in the last days of the disease; the *former* may continue from one to twelve months various in degree, and occurs in one-third of the number of cases, and is accompanied by numerous and extensive ulcerations.

"When the ulcerations are confined to the ileum the diarrhœa is not less continuous or of shorter duration,—a proof that it is not the exclusive effect of lesions of the large intestine. But these last are probably the chief cause of the diarrhœa of the last days of the disease, for the mucous membrane of the large intestine is much more frequently softened, red, and thickened, than that of the ileum.

"When the ulcerations of the large intestine are considerable, and situated near the anus, the alvine evacuations are extremely frequent, mucous, bloody, and commonly involuntary.

"The emaciation begins, in one-half of the cases, with the first symptoms of the disease, whether this be acute or slow in its course, which may be of five months or of three years. In the third part of the cases it only begins with the fever. It cannot be attributed, in its commencement, either to the fever, or to the diarrhœa, or to an appreciable lesion of the mucous membrane of the stomach.

"The *pneumonia* which supervenes in the last period of phthisis, pursues a rapid course and may greatly hasten the fatal termination. It is not so when it manifests itself earlier in the disease, and whilst the patients pursue their employment, and are not much thinner; it is then frequently cured, even though there may be tuberculous cavities. We cannot say this of the more or less severe pleurisy which shows itself in the course of phthisis; I have not seen it cured, except in one instance, even when it began before the tubercles were softened.

"The symptoms which denote *ulcerations of the epiglottis* are, a pain at the upper part of the thyroid cartilage, difficulty in deglutition, and the escape of fluids through the nose, the pharynx and the tonsils being free from disease. These symptoms do not occur in ulcerations of the larynx, when the epiglottis is unaffected.

"Whatever may be the seat, the extent and depth of the ulcerations of the larynx, the symptoms only differ in degree and duration. A superficial ulceration is denoted by slight pain in the part, with a greater or less alteration of the voice, whilst deep ulcerations are attended by continued and acute pain, and aphonia.

"However numerous and deep may be the ulcerations of the trachea, they do not induce any local or characteristic symptom. One patient only, in whom the mucous membrane of the trachea was destroyed in all its muscular portion, experienced, one month before death, a sense of obstruction under the upper part of the sternum, to which was afterwards added a sense of heat.

"The lesions of the mucous membrane of the *stomach* are denoted by peculiar symptoms. When it is softened and attenuated, loss of appetite, nausea, bilious vomiting, and pain at the epigastrium, are almost always present, generally long before death. When it is inflamed at the anterior part of the stomach only, the symptoms are less in degree, number, and duration; there are anorexia and nausea, slight pain at the epigastrium, and, in one case in four, vomiting. The same symptoms take place in the case of large, but single ulceration, or of small and numerous ones. When the inflammation is confined to the great curvature, there is no vomiting, and the nausea and pain at the epigastrium are rare; the disease probably taking place in the last days or hours of the patient's life. No symptom denotes with certainty the mammelated state of the mucous membrane of the stomach, when it takes place very slowly, in which case the membrane is of a slate and gray colour.

"When, in the course of phthisis, vomiting is the mere effect of the cough, there is no epigastric pain, nausea, and anorexia, and it is usually observed early in the disease; the symptoms of disease of the stomach, like this disease itself, occur at a later period.

"There is no distinct relation between the state of the *tongue*, and that of the mucous membrane of the stomach in the course of phthisis. If the tongue is sometimes red and thickened when this membrane is inflamed, the contrary is still more frequently observed; and, on the other hand, the tongue is frequently dry, hard, and very red, when the mucous membrane of the stomach is perfectly natural. In fact, whenever there is fever the whole system participates in the affection more or less; the appetite is lost, the skin hot, moist, and frequently injected, the secretions morbid, &c. Why should the tongue remain unaffected?

"The catamenia cease at a more or less advanced period of the disease, after irregularity as to quantity and return. When phthisis continues less than a year the suppression takes place about the middle of its course; but if it continues from one to three years, this event takes place in the last third of this time. When phthisis has a slow course it is difficult to assign the cause of the suppression, but in other cases that cause is probably the fever, with the development of which it coincides. The catamenia are sometimes, though rarely, regular for the last month of life, and pregnancy

may take place and proceed regularly. It has not been positively ascertained that pregnancy retards the fatal termination.

"Of 123 cases of phthisis, 8 were examples of latent tubercles, that is, anterior to the cough, during from six months to two years. This proportion, though considerable, is, however, less than the reality, if, as we believe, the violent hæmoptysis which precedes the cough and expectoration, is the effect and not the forerunner of the tubercles; besides, that tubercles should exist for a more or less considerable length of time without symptoms is not extraordinary, for inflammation of parenchymatous organs, or of the serous membranes, or even when they assume an acute form, ramollissement of the brain, &c., may exist in this manner. But what is very remarkable is the violence of the symptoms connected with certain organs, as the digestive, in some of these cases of latent phthisis, so that the organ apparently the most affected, is, in reality, the most free from the disease.

"It is impossible, in the actual state of the science, to appreciate the causes which thus mask pulmonary tubercles. These causes cannot be a defective sensibility or susceptibility of the lungs, since six-eighths of the subjects were females, half of whom had experienced, previously to the cough, an intense fever; and the general symptoms imply as much susceptibility of the general system as the local. Nor can we explain the fact in question by the existence of complications; for in most of the cases the disease existed in the simplest form.

"Phthisis sometimes assumes an *acute* character. This was the case in four out of one hundred and twenty patients. General or local symptoms of greater or less intensity proved fatal in from thirty to fifty days. Such an event is to be feared when the patients have been taken suddenly, without assignable cause, with dyspnœa, cough, expectoration, and fever, and sometimes pain of the chest, the respiration being quickened,—when, after a certain time, these symptoms become aggravated, in spite of appropriate remedies,—and when there is no symptom of pneumonia, pleurisy, or suffocative catarrh; and if there be at the same time an obscure sound on percussion, under the clavicles exclusively, with a feeble or impaired respiration in the same points, the existence of this disease may be considered as indubitable. This rapidity of the course of phthisis does not prevent the development of the secondary affections so common in its acute form, so that in the few cases which I have seen, I found ulcerations of the mucous membranes, of the epiglottis, the trachea, the œsophagus, and of the ileum, softening and attenuation of the mucous membrane of the stomach, the fatty state of the liver, tubercles in the lymphatic glands of the neck, and in the glands of the mesentery, &c.

"*Perforation of the pleura* is announced by pain, generally severe, in one side of the thorax, by dyspnœa, almost always extreme, and by inexpressible anxiety; and then by all the symptoms of acute pleurisy. These symptoms continue in the same degree, or with remissions, until death, which supervenes from one to forty days, or sometimes more, after the perforation. These symptoms might have been anticipated *à priori*, or from their similitude to those which accompany perforation of the intestine, from analogy. In both cases, in fact, there is in the moment of perforation, effusion of an irritating fluid on a serous membrane, with the natural consequences of such an event, leading equally naturally to the diagnosis. Suffocation, dyspnœa, and anxiety supervening in a sudden manner might, even without pain, lead to the suspicion of perforation of the pleura. But the diagnosis acquires a still higher degree of certainty from the comparative results of auscultation and percussion. If, shortly after the commencement of the pain, oppression, and anxiety, we try percussion, we obtain a clear sound; while on auscultation we find respiration absent, or altered, and assuming the character designated *amphoric*. When the ordinary symptoms of perforation are absent, as appears to have been the case in the instances observed by Laennec, it is only by auscultation and percussion, practised with general views, that the diagnosis is effected. In one case, at the moment of the occurrence of pain, or even a little before, and also afterwards, the patient had the sensation of the escape of air into the cavity of the thorax.

"If it is usual to find but one perforation of the same lung, it is right to observe that in several cases a number of yellow and white spots have been observed upon the surface of the lung, the result of softened tubercles underneath. Without the adhesions which usually unite the two pleuræ, perforation would not always be single, and would assuredly be more frequent.

"Not only do many of the lesions in other organs *accelerate* the death of phthisical patients, but there are cases in which death takes place unexpectedly; it is sudden; and it arises under two circumstances,—either some new lesion has taken place and remained latent, but proved the cause of death, or no such lesion can be discovered. Two of the former and two of the latter of these cases have occurred to me; and, lastly, two others, in which there was a general softening of the brain, apparently of long duration."

4. *The Morbid Anatomy* of phthisis consists in the different forms and conditions of tubercles; of the cavities left by their

softening and expectoration; and of the adjacent portions of the lung and pleura.

5. *The Treatment* of tubercle in general has been sketched already.

Every means which gives health and tone to the general system: a mild meat diet; a regulated state of the bowels; sponging with salt water; ample clothing, and then a free exposure to the open air, the sea-breezes, &c.; early hours; cheerful society; travelling; sea-voyages; a warmer, serener climate, &c., are amongst the most important measures to be adopted early in this disease.

Such mild measures as induce counter-irritation over the chest, as a sharp liniment; cupping or leeches if there should pleuritic pain; a small blister if there should be dyspnœa; an alcoholic lotion composed of one ounce of alcohol and three, four, or five, of rose-water, if there should be hæmorrhage,—are important auxiliary topical remedies.

Opiates for cough or diarrhœa; the dilute sulphuric acid for profuse perspiration; the sulphate of quinine for chilliness; are other remedies to which we must frequently have recourse in the late stages of the disease.

The inhalation of chlorine, the administration of iodine, have been much used recently. I have never seen any advantage from them.

I will conclude this subject by a very brief notice of one or two other insidious diseases of the lungs.

You have, doubtless, heard of the admirable work of M. Bayle, of whom his friend Laennec gave such a glowing portraiture. ("De l'Auscultation, Ed. 1, t. ii., p. 109.") This author has left us an invaluable work upon phthisis, of which he has proposed to consider *six* different forms:—1, the tuberculous; 2, the granular; 3, the melanotic; 4, the ulcerous; 5, the calculous; and 6, the cancerous. Of these the first, second, and fifth, if not the fourth, must be ranked together. Of the third and sixth, or melanosis and encephaloid, it will be necessary to give a slight account in this place; and first

OF MELANOSIS.

Melanosis generally affects persons of more advanced years than phthisis; and instead of the *hectic* and *emaciation* of phthisis, there is a disposition to *cachexia* and *anasarca*.

I add a few words only on the subject of

ENCEPHALOSIS.

The *local symptoms* of this affection are dyspnœa and cough, sometimes with expectoration. This disease generally occasions death by pressure and suffocation, before any extraordinary emaciation is induced. At length there are emaciation and dropsy.

The case may be mistaken for tracheitis, or bronchitis, when the tumour presses upon the windpipe or bronchia; or for aneurysm, when it is seated so as to receive an impulse from an adjacent artery.

When the tumour has attained a certain size, there is the absence of respiration under the stethoscope, and of sound on percussion.

SYMPTOMATIC AFFECTIONS.

Before I dismiss the subject of the diagnosis of diseases of the chest, I must once more advert to the several *symptomatic* affections which require to be distinguished from them: they are

1. *Hysteric Croup.*
2. *Hysteric Pleurodyne.*
3. *Chlorotic Pleurodyne.*
4. *Dyspeptic Asthma.*

Hysteric Croup is so similar, in some instances, to acute laryngitis, and suffocation has been apparently so imminent, that the surgeon has been on the point of performing the operation of tracheotomy! This operation is particularly noticed by Sir Charles Bell, in his "Reports," which it is much to be regretted that he has left unfinished. By waiting and watching, the case is unveiled by the occurrence of some unequivocal symptoms of hysteria.

Hysteric Pleurodyne is amongst the most acute pains of the chest. The surface of the skin is even sensitive to the touch. It is distinguished by the character of hurry, and other symptoms of hysteria. It is only necessary to put the young physician on his guard in regard to it.

Chlorotic Pleurodyne is sometimes so like chronic pleuritis, that I have known patients to be bled and blistered for the twentieth time, under this erroneous impression. In this case, the history, the general symptoms, and the stethoscope, with percussion, will enable the attentive practitioner to institute the due diagnosis.

True Asthma arises, I believe, generally, from dyspepsia. It is distinguished by the history and general symptoms, by its peculiar sudden attack, and by being unpreceded by dry bronchitis, or other diseases within the thorax.

Here, then, I close my observations on diseases of the lungs. I have given you a *practical* view of this important subject from my own observation, and I have given you the scientific views of one who has happily combined the talent and the opportunity for accurate observation.

In my next lecture I propose to treat of *Diseases of the Heart.*

SUBSTANCE OF A LECTURE
ON THE
PHYSIOLOGICAL ACTION OF LEAD,
DELIVERED AT THE
BLENHEIM-STREET SCHOOL OF MEDICINE,
BY

ROBERT D. THOMSON, M.D., *London.*

When we pour a solution of acetate of lead in distilled water into Thames water, or when we drop a crystal of acetate of lead into the same liquid, you observe that there is an immediate precipitate, which subsides in the form of white flocks, and as long as the solution continues to afford a precipitate, you cannot detect any acetate of lead in the filtered liquor, at least in an uncombined state; for if you pass a current of sulphuretted hydrogen through the filtered liquid, which you know is the usual method of separating lead from its solutions, you never can obtain lead (if at all) free from animal or vegetable matter. This property which acetate of lead possesses, of precipitating animal and vegetable matter, that is, of forming compounds with them, which are insoluble in water, renders it indispensable in purifying fluids from these bodies, and is peculiarly serviceable in pharmacy, when we wish to obtain the alkaloids in a state of purity. I have also employed it for obtaining approximations to the quantities of animal and vegetable matters in different kinds of water, so as to be able to exhibit, in some degree, their relative purity.

In India, as in this country, the causes of diseases have been attributed to every possible source, just as the imagination of the speculator brightened up. I recollect that upon one occasion cholera having broke out with great virulence at Bombay, the impure water of the tropics was immediately set down as the cause of it; the disease, however, was limited in its range, and in the course of a short period it entirely subsided. Now at this very time thousands of persons were in the habit of drinking the same water with impunity, and those who recovered from cholera used the same water before, during, and after their attack, without having any relapse. To prove, however, the fallacy of the opinion in an appreciable manner, I took equal weights of Thames water and the tank-water of Bombay, added to each a solution of acetate of lead, till all precipitation ceased, threw the precipitates on a filter, and washed and dried them; by heating these precipitates strongly the organic matter was drawn off, and the metallic lead remained behind; this, when weighed, was always more considerable in the case of Thames than of Bombay water, from which it was inferred that a greater quantity of organic matter was contained in the former than in the latter, and hence an inference of the erroneous nature of the opinion, which ascribed a greater impurity to Bombay than to Thames water. The latter, in fact, contains more organic matter than any specimen which I have examined, even from the most frequented tanks of India, where the inhabitants are constantly bathing, and stirring up the sediment from the bottom. If Bombay water, therefore, so readily produced cholera, we should expect that Thames water would more powerfully occasion the disease; but all those who have experienced the use of Thames water in long voyages, can bear testimony to its wholesomeness and its exceedingly agreeable taste. It possesses a sweetness which I have never experienced in any other. The great affinity existing between lead and organic matter in solution is of great practical import; for example, it is usual to order a certain number of grains of acetate of lead to be dissolved in water, when it is to be employed as a lotion. Now, if you were to employ water containing organic matter, or carbonic acid, you cannot regulate the strength of your solution without determining first the quantity of these impurities which it contains; if you were unable to procure distilled water, rain water, or spring water, which are pure, in the order named, you might employ Thames water, first adding acetate of lead to it as long as a precipitate fell, and then filtering it through blotting-paper. The filtered liquid might then be employed to dissolve acetate of lead to any strength required. A similar remark applies to nitrate of silver, which should always be dissolved in distilled water, never in Thames water, unless with the precaution here given, because it is decomposed both by the common salt and by the matter contained in the water.

Now it is to be remarked, that when acetate of lead is added to a liquid containing organic matter, the whole of the lead unites with the organic matter as long as there exists any of the organic matter in the liquid; that is to say, if you were to add three grains of acetate of lead (which we shall suppose requires six grains of organic matter to precipitate it) to a solution containing eight grains of organic matter, the whole of the lead would be thrown down in a solid form, and two grains of organic matter would still remain in solution.

Keeping these actions in view, the following case will be interesting, which occurred at University College Hospital, in December, 1836:—

Case.—Sarah Crabbe, a young woman, aged 18 years, was brought to the hospital in a coach, and while she was carried out of the coach she drew a deep sigh, and expired. It appeared from the evidence taken before the coroner, that she had been in

low spirits about a love affair, and that she had drunk the same morning a quantity of sugar of lead and alum dissolved in water, which she had bought to do her gown with, and that the same evening she left the house in Drury-lane, where she was residing, and walked to Camden Town, to the house of a nurse, with whom she was acquainted, and there swallowed a pennyworth of nux vomica, in the temporary absence of the nurse, having previously purchased the poison of a druggist in the neighbourhood.

Mr. Tayloe, of the hospital, was so good as to send me about a fluid ounce of the contents of the stomach; the matter was of the consistence of treacle, had a strong smell of acetic acid, and reddened litmus test paper. I readily detected lead, which I now show you, and strychnine, but could obtain no trace of alumina; hence, in a short notice of the case which was published at the time, I remarked, that "all the alum had been carried away from the stomach, while much of the lead which had been swallowed along with the alum nine hours before death, still remained.

These facts prove that lead, by its combination with the vegetable and animal matter in the stomach, becomes a somewhat permanent resident in the viscus. How is it detained? Is it by its combination with the coats of the stomach, or by getting imbedded in the folds of this organ? A rather interesting inquiry also results from these facts, viz., relative to the state in which the lead swallowed in the form of acetate of lead as a remedial agent, exercises its therapeutic powers. Can it be in the form of acetate of lead after that salt is thoroughly acted on by the vegetable and animal matter?

From these considerations it appeared to be impossible that the idea promulgated by Dr. Anthony Todd Thomson could be correct, viz., that salts of lead only produce death when they are reduced to the state of carbonate. The view which appeared to me the correct one, was that death would only be occasioned when the quantity of animal matter decomposed was so great as to produce disorganisation of organised membranes, and that if it could be reduced to the state of oxide without combining with organic matter, it would be carried off without injury to the animal economy.

In a lecture, by Dr. Sigmond, lately printed in THE LANCET, the author states that he differs in opinion from Dr. A. T. Thomson, but without giving us the grounds of his opinions. As he has also omitted any notice of the recent important experiments upon the animal structure with lead, and as the subject is one of experimental and not of argumentative investigation, I shall make no apology for presenting you with a summary of the excellent observations of Dr. C. G. Mitscherlich, of Berlin, published in Müller's "Archiv. für Anatomie," &c., Heft IV. and V., 1836, which only came into my hands last year.

1st. *Action of Acetate of Lead upon Albumen, &c.*—When acetate of lead is added to a solution of white of egg, a precipitate is immediately produced, which dissolves in an excess of albumen, and also by the addition of an acid; filtering the precipitate, the liquid which passes through the filter contains a compound of albumen and lead in solution. Hence there are two compounds, at least, formed, one soluble, and the other insoluble, in water. Similar results take place with casein, salivary matter, osmazoin, and the pepsin of Schwann, while no compounds are formed with fibrin and glue.

2nd. *Action of Acetate of Lead upon the Solids and Fluids of the Body.*—When a solution of acetate of lead is poured upon a muscle the latter becomes white, and the whiteness penetrates into the substance of the muscle in proportion to the quantity of acetate of lead; this is a new compound, formed between the matter of the muscle and the acetate of lead; other metallic salts form analogous compounds. When acetate of lead is applied, in small doses, to the intestinal canal, it is completely decomposed by the secretion from the mucous membrane, but when it is administered in large doses, the secreted fluid is entirely decomposed, and the excess of acetate of lead penetrates to the living surface of the membrane, and combines with it, and what is termed in common language corrosion takes place. The same result is equally produced on a dead or living mucous surface, or upon the conjunctiva, in wounds, on the skin, on raw surfaces, in cellular tissue, nervous or muscular fibres. When solution of acetate of lead is introduced into the circulation, the water of the blood is precipitated by the metallic salt,—the blood globules are not affected, except that they are no longer completely transparent. The effect upon the blood seems to be the combination of the albumen with the acetate of lead.

3rd. *Experiments on Animals.*—The result of these experiments was, that when to rabbits half a gramme (7¾ grains) of acetate of lead dissolved in distilled water, was administered daily, the animal died after 10—12 doses (77½—93 grains), with corresponding alterations of the structure of the internal membranes. The first doses did not produce much effect, except that less feculent matter and urine were voided. After the 6—7 doses the animal became weaker, lay more frequently on its belly, and in some cases was affected with spasms, which subsequently disappeared. The weakness daily increased, the excretions diminished, respiration became oppressed, and death took place, accompanied with episthotonos. On dissection the stomach was found to contain

a yellowish fluid, which possessed an acid reaction, and in which white insoluble flocks floated. This was similar to the result which I obtained in the case of Sarah Crabbe. Lead could readily be detected in the filtered fluid, and also in the solid contents. The mucous secretion was converted into a white homogeneous looking mass; in most cases the mucous coat was somewhat, but very slightly altered; a large number of small white points could be detected on its surface, produced by the chemical action of the acetate of lead upon the structure. The small intestines were healthy, without white points, containing tenacious mucus and very little fluid. The cœcum was filled with a pap-like brown mass, but was healthy. The rectum contained a small quantity of hard fæces, which yielded lead by analysis. The blood was considerably charged. The proportion of serum to the solid materials was much diminished, and the latter were strongly coagulated; the serum was thick. The lungs were mostly free from air and blood, and possessed only some dark points; but in some cases they were much darker than usual, from the black coagulated blood. The bronchial tubes were healthy. The kidneys were healthy; the bladder was generally filled with clear urine; all the other organs were healthy.

When the dose was increased, as when 10 grammes (154½ grains) of acetate of lead were injected at once into the stomach, the effects produced were more rapid and more aggravated; the respiration and circulation became very soon increased; the dung was firm, but whiter than usual; the urine frequently contained white flocks, and sometimes bloody. After some hours the animal became much weaker and the respiration difficult; it lay much on its belly, and was affected by convulsions. The debility gradually increased to such an extent that the head could no longer be sustained but sank between the fore-legs; the pulse became imperceptible, and death took place with opisthotonos; the time which the dose required to produce the fatal effect varied from three to twelve hours. In addition to the appearances detailed as observable on dissection after death from small doses, the slimy-looking mass produced by the decomposition of the mucous secretion, was found to cover the mucous coat to the depth of 1—2 lines; the mucous coat had undergone very considerable alteration: it formed a gray, whitish, dry mass, which resembled very much in consistence coagulated albumen or curd. A similar appearance is produced by digesting mucous membrane in a strong solution of acetate of lead. The muscular coat was also affected, being in some places completely white. The whole of the mucous coat of the small intestines was acted on by the lead, being white, thickened, and dry. In numerous places red spots were observable which were ecchymosed points. The acetate of lead appeared to have penetrated through the corroded mucous coat which formed the folds of the intestine until it came in contact with the blood-vessels, which it also corroded; it then mixed with the blood, and deposited the dark coagula. The mucous coat of the blood-vessels was also in many cases acted on by the lead in addition to the coagulation of the blood. The urine was frequently milky and sometimes bloody; in the latter case the outer surface of the kidney was found to be darker than usual.

From these experiments it is evident that when acetate of lead is introduced into the alimentary canal it speedily combines with the fluid and solid substances with which it comes in contact, and that it never reaches the blood-vessels in the state of acetate of lead. In a therapeutical point of view, the question, therefore, for solution is, What is the action of the compounds of acetate of lead and animal matter upon the economy? Before we can prescribe with safety acetate of lead for hæmorrhages from the lungs, it is obvious that this question must be solved. Mitscherlich accordingly extended his researches to this point.

4th. *Action of Acetate of Lead when combined with Albumen and Acetic Acid.*—Half a gramme (7.75 grains) of sugar of lead was dissolved in water, precipitated by an excess of albumen, and the compound dissolved in acetic acid. This dose was administered to rabbits every other day. Death occurred from the seventh to the sixteenth day. It required 3.5 grammes (54. grains) of acetate of lead to produce death, or half the quantity which was necessary of pure acetate of lead. The symptoms were similar to the cases detailed. After the fourth dose great weakness was exhibited. The sixth dose produced bloody urine. The seventh dose caused the animal to be very sick. On the sixteenth day violent spasms came on at intervals of four hours, and death took place with opisthotonos. On dissection the mucous membrane of the intestinal canal was found to be uncorroded, of the natural colour in the stomach, but reddened in the small intestines; a number of brownish-black points were observable at the large curvature of the stomach. The lungs contained very little air. The kidneys exhibited in some parts of the cortical substance a blackish-brown appearance, similar to what is found when bloody urine has been discharged. The blood-vessels contained very little blood. The blood was strongly coagulated and dark. The serum possessed a cherry-red colour. From these experiments it is obvious that the compounds of albumen and acetate of lead, when dissolved in acetic acid, are twice as poisonous as when acetate of lead is used alone.

In the latter case a small portion only of the compounds is dissolved by the free hydrochloric and lactic acid of the stomach, and it is only the soluble compounds which are poisonous.

5th. *Action of Acetate of Lead on Wounds.*—An incision half an inch in length was made near the spine of a rabbit, and the cellular substance detached by the handle of the scalpel so as to form a bag extending to the mesial line of the abdomen. Two grammes (30.86 grains) of acetate of lead were introduced in substance and the edges of the wound brought together. On the following day the same experiment was performed on the opposite side. After two days two grammes (altogether six grammes, or 92.6 grains) were introduced into a wound in the posterior extremities. The animal became lame in these limbs, as dissection showed, from the corrosion of the muscles by the lead. Respiration was affected by the size of the lesion in the pectoral and abdominal muscles, and the animal died on the evening of the following day without strong convulsions. On dissection the parts in the neighbourhood of the wounds were converted into a white, dry, easily divisible mass; the corrosion extended to 1, 2, and 3 lines in depth, and in one place to the peritoneum. The arteries and veins on the corroded surfaces were also white. The blood in the other vessels appeared unchanged.

In another experiment half a gramme combined with albumen, and introduced under the skin, produced death in twenty hours, with symptoms of opisthotonos; and in a third trial, one gramme (15.43 grains) of acetate of lead, dissolved in acetic acid, produced death in three hours. Hence it would appear that pure acetate of lead corrodes chemically, and can only produce symptoms of general poisoning when it comes in contact with surfaces discharging free acid which may dissolve the compounds. In the other cases the symptoms were similar to those induced by the introduction of the same substances into the stomach.

6th. *Examination of the Blood and Urine for Lead.*—Mitscherlich obtained a very minute quantity of a black precipitate by means of sulphuretted hydrogen, which he suspected to be sulphuret of lead, but the quantity was too minute to decide. No lead was found in the urine.

Conclusions.—From the experiments which have been detailed we learn,—

1st. That when acetate of lead is applied directly to the stomach, it acts upon the mucous secretion, and if the dose is sufficient, upon the mucous coat itself, corroding it, according to the usual term of expression, or, more correctly, forming a chemical combination with the matter of which it consists. According to the strength of the dose the mucous coat of the whole intestinal canal is more or less affected. Hence if we wish to administer acetate of lead to stop hæmorrhage of the intestines, it should be given in solution in water.

2nd. Acetate of lead only produces symptoms of general poisoning when the compounds which it forms with organic matter are in solution in acids. Hence the method recommended by Dr. A. T. Thomson, of giving acetate of lead with vinegar, is the very method for increasing the poisonous effects of acetate of lead; the occurrence of carbonate or oxide of lead in the stomach in a free state is impossible after the administration of acetate of lead.

3rd. These experiments elucidate the action of acetate of lead when employed to overcome inflammation of mucous membranes. It first decomposes the secretion, corrodes the membrane, penetrates to the blood-vessels, which it also corrodes, coagulates the blood; it, in fact, kills the part, which ultimately falls off either by detachment, or by being dissolved.

These experiments are of great value in a therapeutical point of view, because they afford a kind of type of the action of all metallic salts; the nature of their therapeutic power being strictly an object of chemical research. The presence of lead in the blood, and its state of combination in that fluid still remains to be determined.

UNIVERSITY COLLEGE HOSPITAL.

ANIMAL MAGNETISM.

On Thursday, May 10th, a remarkable exhibition of the effects of "animal magnetism" took place at this hospital, at which nearly 200 medical gentlemen, students, and other observers were present. Among the company were the Marquis of Anglesea, Sir Charles Paget, the Earl of Burlington, the Duke of Roxburgh, Earl Wilton, Lord Dinorben, Dr. Faraday, Sir Jos. De Courcy Laffan, Sir J. South, and several Members of Parliament. The proceedings were conducted in the theatre of the hospital, by Dr. Elliotson, assisted by Mr. Wood. The company, so many of them as could find sitting-room, being seated in the area of the theatre after the benches above were filled, Dr. Elliotson presented on the floor a girl named Okey, eighteen years old, somewhat chlorotic in countenance, and diminutive for her age. She was brought from the wards of the hospital, where she had been placed under treatment for epilepsy of many months duration. The girl had several times before, as we were informed, been made the subject of public experiments in magnetism. Her figure was somewhat womanish, but her face and head were those of a child. No particular character was indicated by her features, or by any expression of feeling that could be observed in them.

Having taken his stand by the side of a chair on which she sat with her face towards the audience, Dr. Elliotson spoke to the following effect:—

"He was," he said, "fully aware that in prosecuting his inquiries into the subject, he exposed his character to risk, many persons believing that magnetism was a mere deception, or an absurdity. The first phenomena of magnetism which he had seen were produced by Mr. Chenevix, nine years ago, at St. Thomas's Hospital. But they were very slight. Yet, although what he then and had since witnessed, in the experiments of M. Dupotet, was not explainable on any known law, he was firmly convinced of the reality of the facts which he had seen, and having since himself verified them, he considered it to be his duty to show them to the students, to the medical profession at large, and to any men of education who might take an interest in the matter. In thus exhibiting new facts, it was only courtesy to show them to gentlemen from other schools, who chose to visit the hospital. Teachers from almost every school in London had also witnessed the experiments; every professor, but one, of King's College, had seen them, and that gentleman was absent only because he lectured at the time the experiments were performed. The institution in which they were exhibited was called a *liberal* institution,—all institutions should be liberal in the prosecution of science,—and he could not perform anything connected with its inmates, with closed doors. Yet he had been asked to take the patients on whom the experiments were tried, away from the hospital, on these occasions, to a private lodging, or an hotel in the neighbourhood. But he knew very well that if he had prosecuted his inquiries with closed doors, suspicion would have arisen that he was afraid of publicity, and of the testing of his assertions. He, therefore carried on his experiments with the greatest openness, and he would still continue to do so, for he was satisfied of the truth of the phenomena produced. The influence of animal magnetism was no discovery of his. He was himself a student in the science,—for a science he must call it,—and as for being made to suffer for his determination, why he could only say that he could not help *that*. He understood that some of his *colleagues* (who would not witness the facts which he had demonstrated, though *other* teachers had done so) had sent round a letter to obtain the signatures of all his brother professors, for the purpose of putting a stop to the investigation in the hospital; and one of the reasons alleged for this step was that the friends of some students would not send them to the hospital, if such inquiries were conducted there. The institution, however, under whose roof they were now assembled, was established for the promulgation of truth, and the promotion of education founded on *facts*, and if the views which he taught were correct, then it was the duty of the other professors also to adopt them, whether the "institution" was supposed to suffer or not from so doing. For the hospital was not founded in order to fill the pockets of the professors, but to throw light on truth and nature, and to expose fallacies. The question, then, to be decided was this, 'Is animal magnetism based on facts or fallacies?' If his brother professors had come and witnessed the experiments, and found them to be unsound, why then they might have condemned him, and stopped the inquiry. For his own part, he really had investigated the subject just in the same way as chemists investigated the properties of organic matter, and he had found animal magnetism to be a powerful remedial agent. A severe case of periodic insanity, which had resisted all other treatment, was remarkably relieved by the operation of magnetism, on its second employment, and in a fortnight the patient was well.† A child who had laboured under paraplegia and incontinence of urine during nine months, was perfectly cured by this agent. In a case of epilepsy in which a fit had occurred every day for nine months, the performance of magnetism at once arrested the fits, not one occurring during a month after its first application, and the patient went home well. In a case of delirium in a young woman who was subject to hysteria, which lasted during five days,—and for which, being of a robust habit, she was bled and purged without benefit,—the patient, on the second time that she was magnetised, became tranquil, and afterwards remained well. In a case of St. Vitus's dance, in which no other remedy was tried, magnetism effected a cure. In conclusion he was enabled to state that a body of members of the Physiological Committee of the Royal Society had considered the subject to be one of so much importance, that they had attended to witness its effects, and test its truth. Among these were Professor Grant, Dr. Arnott, Dr. Roget, Mr. Mayo, Mr. Kiernan, Dr. Bostock, Professor Wheatstone, and Professor Sylvester. If the matter was altogether a folly, these gentlemen would not fail to prove its claims to that title."

The girl, during this address, was perfectly passive, appearing to pay no attention to the discourse. She was examined with scrutiny through many spectacles, eye-glasses, and opera-glasses, but did not notice the curiosity thus evinced at her presence.

Being unprepared for so quick an exhibition of phenomena as occurred, we did not observe the mode by which the patient passed from the natural state to that of inoffensive delirium, or "sleep-waking,"

† Case of Mr. Chandler in THE LANCET.

which condition she presented almost instantly after the close of Dr. Elliotson's remarks, and as we mean to describe on this occasion nothing but what we distinctly witnessed close to the girl, we shall commence with the first circumstance that arrested our attention, when the dull and hippocratic countenance of the patient had changed to one of mingled archness and simplicity. The question of deception was at once met by a conviction, derived from appearances, that the most accomplished actor that ever trod the stage could not have presented the change with a truer show of reality.

Rising from the seat, when Dr. Elliotson had concluded, her attention was attracted by a worn oak chair in the middle of the area. She was then, Dr. Elliotson said, in a state of delirium, and unconcious of the great crowd on the benches, above the first row. The audience *en masse*, in fact, never once arrested her attention. Only single objects that were immediately before her excited her remarks.

"Oh!" she exclaimed, "what a dirty-white chair," turning it round. The chair was removed by Dr. Elliotson. She then advanced and said, with innocent familiarity, and a peculiar and agreeable tone of voice, "Oh! how do ye?" to the Marquis of Anglesea, who sat immediately in front of her. "White trowsers. Dear! you do look so tidy, you do. What nice things. You *are* a nice man." The Marquis wore bright buff trowsers. "Gloves, not white; and what a nice stick." (Turning to Sir C. Paget.) "Why do you wear your hat?" She was proceeding to take Sir Charles's hand, when Dr. Elliotson approached her, and, unseen by the girl, waved his hand from the head downwards, behind her, without touching her. She instantly closed her eyes, tottered for a moment on her heels, and fell backwards, in dead sleep. She was caught before reaching the ground. In half a minute she recovered, without interference, and returned to her chair, which she recognised as being of a "nicer white" than the other. It was carved and polished. She was then put to sleep again by another pass of the hand, and restored by the Doctor's blowing twice in her face, when she again advanced to the visitors, borrowed a stick to admire, restored it, and took from Sir Charles Paget an ivory opera-glass, which she apparently much esteemed, saying, "Oh, Dr. Elliotson, see what I've got." Indeed, everything bright gratified her as being such a *white* thing. Such particulars it would be trifling to relate, but the curious circumstances which followed render an exact representation of all that occurred essential to satisfy the reader, *pro* or *con* the whole question involved in these events. "Give the glass to the gentleman again," the Doctor said. "Where is he?"—"Look round and see."—"Tisn't yours, beauty cheeks," she said, to a rosy-looking gentleman on the right. The glass restored, she proceeded to amuse herself among the throng around her. "Oh, what a beautiful oyster!" she said, looking at a breast-pin in the handkerchief of one gentleman. Dr. Elliotson explained that he once, while in this state, happened to tell her that a brooch was an oyster. He now, while behind her back, passed his hand from above downwards, in a line with the middle of her back, when she instantly fell into the lap of the gentleman next to her, in a state of perfect sleep. Blowing in her face smartly awoke her, and restored her previous cheerfulness; and then, walking about, she met with Dr. Elliotson's assistant. "Oh, Mr. Wood, dear, how do ye? Look here, what lots of feet!" pointing with her hand to the feet of the sitters all around the area, one of whom having his hat in his lap, she put in her hand, and drew out his gloves, which she spread smooth. "Come, sit down, Okey," said the Doctor. "Aye, Dr. Ellisson," asked she, "I say, where *can* I sit down?" There seemed, indeed, no room to sit anywhere, but she was taken to the chair, and reduced by a pass of the hand before her to the state of sleep. Dr. Elliotson then stooped down behind her chair, out of reach of her sight, and snapped with his mouth (noiselessly) three or four times, the girl doing the same. Being again awoke as before, a sheet of mill-board was placed below her chin, so that she could see nothing that was beneath it. The board provoked her displeasure, which she vented thus:—"How do you, nasty beast? Such a dirty beast you are. I do'nt like you. Does your mother know you're out?" (Much laughter around.) "Go along with you." In such terms she invariably addressed the board, as though it were some living object. Dr. Elliotson then produced slight movements in her hands, by motions of his own below it, to which the girl all the while addressed herself. She did not attempt to put the board away with her hands, which laid in her lap, Dr. Elliotson stating, that unless she could see her hands she never used them during the delirium. This statement was repeatedly verified in the course of the proceedings. "Where's that beauty white gentleman?" (the Marquis) she continued. She was here put to sleep (this was always done by a pass of the hand), and then the mill-board, which was about two feet square, still excluding her view from all below (her eyes also being closed) the Doctor drew his hand, pointed towards hers, upwards and outwards in the air. In a few seconds her hand and arm began to move up in the same direction. While ceasing, for a short time, in order to talk to some one near, he produced a motion with his fingers, which those of the girl im-

mediately imitated. "See," said the Doctor, "my fingers were moved involuntarily; I did not mean to influence hers." Her arm remaining in the elevated position, the Doctor, by the same process, raised the left limb to a level with the right, and so it remained. "This is a state of catalepsy," he said, "but I will make the condition still more striking." Then pointing his hand to the right foot, the leg was drawn upwards and outwards. Some visitor in the meantime lowered his hand, and by the same means drew the left foot and leg of the girl outwards. We then examined the limbs, and found them all rigidly fixed, the girl resting for support only on the seat, thus remaining for several minutes, when Dr. Elliotson blew sharply in her face. The limbs all dropped, and the girl awoke. "Now, find Dr. Elliotson," the Doctor said, whereupon she went towards the gallant Marquis, and searched about for a moment, but soon forgot the direction, and began to admire his "tidiness" again. Turning to another point she found the Doctor in front of her, and exclaimed with delight, "Oh, Dr. Ellisson, how do ye?" and on being placed in the chair, with the board before her eyes, she asked dejectedly, "Ah, where are you gone?" (Board removed.) "Oh, Dr. Ellisson (in raptures) where *hare* you been?" The Doctor then raised her hand, by passes of his own, in an upward direction, and performed, as it were, ejaculatory motions with his fingers opposite to her own, which for some time she did not imitate, but noticed with laughter and playfulness. "Don't be silly," she said, "you silly man. Oh, but you're a fool, Dr. Ellisson. Ha! ha! How do ye? Mine won't go like yours. They ain't so silly. Oh, Dr. Ellisson, leave off, its no use." But at last they began to open and shut like the Doctor's, upon which her eyes closed, her head fell back, and she went fast asleep, from which state she was awoke by blowing in the face, instantly saying, as she did almost invariably, on every recovery from stupidity or sleep, "Oh! How do ye?" The sight of her arm was then excluded from her by the board, and the Doctor attempted to raise it as before, but the limb would not move, in consequence, the Doctor said, of the girl being *awake* and *not* seeing it. So he held it up by the sleeve, and then agitated his own fingers in front of hers, but in vain. He therefore put her *to sleep*, when the arm rose, by passes drawn upwards, and the fingers imitated the motions performed before them. The board being removed, the girl, on awaking, exclaimed immediately, "Oh! Dr. Ellisson, how you did go! How do ye? How white you are! Are you?"—the Doctor made a pass, and the girl fell asleep while speaking, her head dropping on her breast. Being again awoke he next showed, as "one of the most singular and important of all the effects he had observed in Mesmerism," the "effect of *mass*, or *surface*, in producing sleep." Extending one finger, he passed his hand down before her, when she instantly evinced temporary "stupidity," and then awoke of herself. He then extended two fingers; the stupidity produced was "more confirmed and lasted much longer." (It should be mentioned that she would wake of herself in short intervals, after *slight* passes, if not awoke by blowing.) Three extended fingers were then passed, and perfect sleep ensued, arousing with the usual "Oh! Dr. Ellisson, how do ye?" The Doctor then put his hands horizontally before her mouth (three or four inches from it), palm towards palm, the ends of the fingers only touching, and on suddenly parting them the girl opened and clashed her jaws. This was done three or four times, and the effort apparently was one which she could not avoid making. Relieved from this experiment she placed her hands in her lap, and, leaning forward, said, with archness and good humour, amid abundant laughter, from the company seated around, which she did not at all notice, "Poor Dr. Ellisson, would you like some sop, with some milk in it?"—"No, for then I should be a milksop."—"You've got some beauty oysters there (shirt-buttons.) You've not got that rag on now (a black silk 'stock front' which the Doctor sometimes wore). It looks so clean and white (the shirt front). Oh! Dr. Ellisson, you poor thing, an't you? How do you? Aye?" Mr. Wood, who was behind her, here pointed one finger to the left side of her mouth, and drew it slowly away, when, after three or four repetitions, the mouth twisted in the same direction, and so remained. This experiment was repeated several times by Dr. Elliotson also, and always, excepting once (when her attention was "too strongly directed to some object in front"), with the same result. The finger, pointed to the eye, and moved in the same manner, drew both eyes forcibly aside, and there, like the mouth, they remained rigidly fixed, the face presenting a singular idiotic distortion. The release from this condition was followed with the usual "How do ye, Dr. Ellisson?"

The hands of the patient were then clasped, and she was told to keep them together, when the Doctor, from behind her, spread his arms, and, pointing to each elbow, drew his hands outwards and backwards from the body of the girl, who certainly did not see the process. After a few of these motions her arms attempted to follow, but the hands were firmly clasped. Gradually, however, her arms straightened, and the ends of her fingers, in keeping their hold, dug into the back of each hand, the countenance indicating the greatest effort to prevent separation, and the girl exclaiming,

"Don't you; oh, don't; pray don't." But at last the magnetic influence seemed so forcible, that her strength no longer availed, and the hands burst apart with a smart snap of friction. She then, after playing with the folds in her frock for a short time, began to address her wrist, with displeasure at something. "Don't you," she said, threatening the part with one finger, "You musn't. Mr. Wood, pray hold it. Nasty dog, I never see such impudence." Presently she whistled a tune clearly and correctly, and then rose to feel the shining boot of a gentleman who was sitting in the chair recently left by the Marquis, who had found, he said, the atmosphere too warm for him. While stooping at this time the writer twitched her hair, and pinched her neck, but she did not notice it, or evince the slightest symptom of pain. On rising she observed, "a nice large gentleman, with white legs."—"You are not so big," she said to his neighbour, "are you?"—"No, for that gentleman has the advantage of being stuffed?"—"Stuffed? Pray with what? Is it with a good dinner? for that's the best of all good stuffing." Some visitor at this moment, out of her sight, passed his hand down behind her back, and thus instantly stupefied her. She fell backwards, and was caught by the nearest person. On Dr. Elliotson blowing in her face, she recovered quickly, saying, "Ah, Dr. Ellisson, what did you go for? You beauty white man." She was then seated in a chair and the state of catalepsy was produced and dissipated, in precisely the same way as before, by the Doctor and some visitor; for all the effects on the arms, legs, and fingers, could be produced by any stranger, as by the Doctor. On restoration from this state, she began to address her hands, saying, "You haven't very white fingers, I think,—(her hands were perfectly clean, but exhibited numerous warts),—never mind, my dears, I'll make you white once a day, depend upon it. Come, talk to me. Why don't you talk? Speak, I say. You're not good for that. Would you like to be happy my dears? Oh! pray tell me, do. *Mechant diable.** 'Spose I give you no dinner. You'd be very glad to talk then."

While proceeding in this strain, Mr. Wood behind her (with his fingers pointed towards her back), commenced drawing his hand from her, as if marking a chalk line, and straightening it by repetitions, as its length increased, when, having retreated about five yards into the ante-room, the girl began to twitch a little, until, at last, she gave a violent start backwards, the body straightening, and carrying chair and all a yard distance towards the magnetiser. This violence, Dr. Elliotson said, was owing to the distance which was reached before the effect of the process was obtained. These proceedings did not at all depress the spirits of the patient after recovery, on each occasion, from the state of sleep.

Restored to her former position, Dr. Elliotson several times stooped behind her, and successively winking his eyes, gnashing with his jaws, and distorting his mouth, produced the same effects in the girl, with an occasional exception. Then, coming in front of the patient, he caused her to magnetise herself, by desiring her to "make bows to her face," with one hand. After half-a-dozen of these passes she fell asleep. "Marvellous!" murmured the astonished commoners. "Very odd concern," observed the carriage company, who arrived by turns, and saw the phenomena by bits.

She now whistled the "Green Hills of Tyrol," perfectly as regards both time and tune, and afterwards sang two psalms, without words, in an exceedingly delicate tone, while playing with a bit of thread, or picking the flowers on her frock. Being stupefied with a pass, on recovering she asked where Dr. Elliotson was. "I'm in that boot," said the Doctor. "Are you?"—"Yes, and I ate Mr. Wood for breakfast today, and have got in there."—"Oh! come out," said she, "don't live in that nasty hole;" and began to put her hand up the trowsers, when she was stupefied for a moment by a pass. On recovering the erect posture, she said to the visitor, "Oh! How do ye? You're a very fat gentleman. Stand up on your understandings, and let me see how you look then. If I'd got such such a pair, I'd not sit down I can tell you." On Dr. Elliotson again performing magnetic experiments behind her, with the purpose, as he said, of affecting the pupils of the eyes, the lids opened to the fullest width, as her head magnetically stretched backwards, and the pupils, having first expanded greatly, then gradually diminished, as the magnetiser retreated from her chair, until they had contracted to the size of a pin's head. This phenomenon, the Doctor observed, was most singular. Coming in front, he passed his fingers upwards in front of the eyes. The lids opened with unnatural width. Then passing his hands down they closed simultaneously. She now began to sing. "Pray don't sing," said the Doctor. "Don't sing," she replied; "where does sing live? I *may* sing 'Buy a black sheep,' for Mr. Wood told me so." She sang one verse, adding, "I don't remember any more, but I'll sing *Jim Crow*." The mill-board was here placed before her face for some experiment which we cannot recollect, when she said to the board, "Oh, you nasty boy. What a dirty black fellow you are." She then sang a verse of "Sound the Loud Timbrel," and on coming to the line, "Jehovah shall triumph," said to the board, "Will *you* triumph, you dirty beast. I'm sure you won't, *misce*

* A French woman lies in the same ward with Okey.

crutis, crece crow,"—words which were unintelligible.

A child was now brought into the theatre, from the wards, and placed on the chair, from which Okey was removed, who, not knowing what else to do, sat down on the mill-board, and whistled and sang in a sweet tone, once with very artist-like variations, evincing symptoms of a ripe faculty of music. Ending, at last, with *Jim Crow*, she stopped in one verse to ask Dr. Elliotson if *he* also had "come over from Kentucky," like Mr. Crow, and then volunteered to "wheel about, and turn about," but was prevented, to the manifest disappointment of many spectators.

The brief attempt which was made to magnetise the child failed. Only a few yawns were produced. Okey was then transferred to the chair, and the child was placed on a stool before her, and set to magnetise the girl with passes, which she was showed how to make. Okey laughed heartily at the little operator, uttering various humorous sentences:—"Suppose, my little dear, I was to knock you off your perch. I say, Dr. Ellisson, 'spose I was to knock you off *your* perch; how funny you'd look. But I won't do that; I wouldn't hurt you." The passes of the child were counted. When they had reached 35 in number, a momentary sleep came on, but soon ceased; at the 45th pass, perfect stupefaction was produced. The girl recovered from this state of her own accord, in half a minute, and Dr. Elliotson stated, that he would next endeavour to show the effect of *numbers* in increasing the power of magnetic operations. Accordingly, he placed his hand on the shoulder of the child, who then recommenced the passes, and at the 21st pass Okey fell fast asleep. "I had thus made the two systems one," the Doctor observed.

On awaking, the girl resumed her playfulness, sang *Jim Crow* again, and jocosely scolded the child on its beginning the process for the third time. "What do you mean by that, you little thing. How do ye? What are ye playing so for. I'll knock you off. It's like your impudence." On this third occasion, a visitor was borrowed from the crowd to lay a hand on the child, in addition to that of Dr. Elliotson, and then 18 passes set Okey to sleep. A second visitor was employed, and then 13 passes produced sleep. A third lent a hand, and now 5 passes affected somnambulism. A fourth laid his hand also on the child, and then 2 passes sent the girl into the soundest sleep. The five aids now retired and the child was again set to work alone, Okey observing to the child, as it was directed to commence operations, "Oh, go on, my little dear; there's no *compulsion*, only you must." On this occasion 35 passes produced sleep,—exactly the number at which temporary stupefaction was produced on the first trial.

A third patient was now introduced, about two hours having elapsed from the commencement of the exhibition. This was a sister of Okey, also epileptic, brought from the wards, and who was stated by Dr. Elliotson to be infinitely more sensible to the magnetic influence than her sister,—for even to point at her would produce sleep,—nay, even to look at her intently,—as the Doctor verified immediately, the girl falling instantly into the lap of the nearest sitter on being pointed at, and flying away from the Doctor, in terror, the instant, as it appeared to the spectator, that she had an impression that on looking at him she should find *his* eye fixed sternly upon *hers*. So many exciting circumstances had now come under our observation, and the crowd was so dense in the area of the theatre, that, with one exception, we could not note, with the same undeviating precision, the few experiments that were next performed. Suffice it, therefore, to say, that proof was apparently afforded, that the little child who could not be put to slumber by itself, was sent to sleep on holding the hand of Okey's highly sensitive sister, by employing the magnetising process on the latter. The sister was herself also instantly sent to sleep by holding the hand of Okey while the latter was being magnetised, and so on, these experiments being varied in several ways, all apparently verifying the previous announcements of the Doctor. Finally, the task remained of recovering Okey from the state of "delirium," in which she had continued throughout the two hours and a half of experiments; but this proved to be rather difficult of accomplishment. Dr. Elliotson first put her to sleep, and then, at the back of her chair, rubbed his thumbs transversely across the eyebrows, many times, but in vain. She could be easily restored to the waking delirium, and to the same acuteness as had all along distinguished that condition; but on being again put into the somnambulic sleep (without which restoration to natural wakefulness could not, he remarked, be produced) in that state she persisted. At length the Doctor, wearied with the effort, said that he must leave her until there was less bustle around. Upon this Mr. Wood tried his powers, but also unsuccessfully. He then asked her, in a low tone, close to her ear (this passed under our immediate observation), when she should awake. (The same kind of experiment, Dr. Elliotson afterwards remarked, had never before been tried upon her; nor had any attempts been made in the hospital to test, in her, the alleged phenomena of *clairvoyance*, seeing with the eyes closed.) After a few repetitions of the question, the girl said, "In five minutes."

"Shall you awake of yourself?"—"No."

"How then?"—"You must wake me."

"In what way?"—"By rubbing my neck."

The lips barely moved to utter faintly these replies, which contained the only words spoken by the girl while *asleep* during the afternoon. The prophecy was tested by a watch, and just before the expiration of the time announced, Dr. Elliotson began to pass his thumbs transversely on the neck, continuing the process, but in vain, for half a minute, when Mr. Wood took it up, and in a few seconds the girl awoke to her natural state. No two manners could exhibit a greater contrast than did her deportment now and that which she presented during the "delirium." Her manner was downcast and reserved, and indicative of fatigue. On asking her where she had been, and how she felt, she only replied that her head ached, Dr. Elliotson saying afterwards that she had complained of headach on first entering the theatre. On proceeding to leave, as the throng of persons opened to let her pass, many gentlemen, won by her apparent amiability, shook hands with her, which compliment she engagingly acknowledged by a slight curtesy, seemingly greatly wearied, depressed, and much abashed at her situation. Then quitting the place she returned to that repose the necessity of which no deception was required to make manifest.

In conclusion, Dr. Elliotson stated, that in the circumstances respecting the influences of "mass," "surface," and "numbers," in magnetism, he recognised the existence of a law which permitted him to believe that this "science" would, at some future day, be reducible to certain fixed principles, the basis of one of them being thus declared, though not yet with sufficient clearness and certainty to justify dependence on any rule apparently deducible therefrom.

ON

CALCAREOUS AND BONE-LIKE CONCRETIONS IN THE LUNGS.

By W. H. JUDD, *M.R.C.S., Surgeon in Her Majesty's Guards.*

To the Editor of THE LANCET.

SIR:—As isolated cases descriptive of diseases of rare occurrence are insufficient to enable us to collect a correct knowledge of symptoms, or to form practical systems of treatment for their cure, perhaps the following instances of calcareous concretions and bone-like depositions in the lungs, in addition to that detailed by Mr. Burford in your Journal of the 14th inst., may prove useful, and induce individuals in extensive practice to give their mite towards increasing the general stock of knowledge on this subject. I remain, Sir, your obedient servant,

WILLIAM HENRY JUDD.

9, Maddox-street, May 8th, 1838.

CASE 1.—G. W——, Esq., æt. 30, Dec., 1829. During more than a year this gentleman has been plagued with slight cough and a tenderness in one particular spot in the chest; he describes it as a sort of internal soreness, from whence the expectoration is perceived to come. He has latterly coughed up with the mucus small round concretions formed of phosphate of lime; they vary from the size of a pin's head to that of a small pea. Some months before I attended him he had expelled a much larger number of these oviform earthy bodies. He is also subject to pain in the right side near the attachment of the diaphragm and upper surface of the liver (as in Case 5).

1838. This gentleman is still living, and his cough has ceased, but he is suffering from diseased knee-joint.

CASE 2.—1838. Mr. C——k, a worthy tradesman in my neighbourhood, has suffered from cough and pulmonic ailments during ten years. I have long observed that he lost flesh and was in a declining state. In his expectoration he coughs up similar, but somewhat larger, oviform concretions, almost the size of peas, and is now apparently dying of the disease.

CASE 3.—Mr. R. I was acquainted with this medical gentleman; he expectorated still larger concretions, and had hæmoptysis, but ultimately died from the effects of virus absorbed from a cut whilst examining a dead body.

CASE 4.—1838. —S—, Esq. On my passage from Ireland this year I was consulted on board the steamer by this gentleman for a similar disease. His symptoms were a cough on rising in the morning, at times accompanied by pain in his side. When these attacks commence he never has any rest from tickling and irritation in the trachea until he forces up some of these oviform concretions. He showed me several that had been brought up, at various times, in his expectoration; occasionally he remains without cough for months; being a fine muscular man he is, as yet, little injured by the disease.

CASE 5.—C. A——on, Aug. 18, 1833. This patient has a cough, with shortness of breath, but can take a deep inspiration. He has an accelerated pulse, hot skin, a furred tongue, and an expectoration of mucus. By the 20th, his tongue was coated brown, and his fever assumed the character of synochus. About the 1st of September he suddenly, to all appearance, became convalescent for some days. When, on the 7th, he relapsed into fever, attended by deafness; he had a fluttering pulse, diminished circulation, blueness of his hands, and frightful dreams, followed by involuntary evacuations and death on the 16th.

Sectio Cadaveris.—The right lung had been inflamed, and lymph was deposited

upon its surface; the pleura on that side contained 16 oz. of red serum; in the lung of this side was found a vomica the size of an egg. The substance of the lungs generally was studded with numerous red, indurated, round portions, like liver, and also with minute gray tubercles; here and there about their roots were situated numerous long, irregular, calcareous concretions, some in the substance of the lungs, others in the cellular membrane of their base; larger fragments of a similar description, almost resembling bone, were found in the bronchial glands; the ramifications of the bronchiæ near each calcareous deposition had their lining membrane highly vascular, exactly like that observed in Case 7.

Case 6.—1831. When in Dublin on Sunday, the 15th of May, I was kindly taken by my friends, Dr. Piper and Mr. Gillespie, to a post-mortem examination. The lungs in this body contained numerous calcareous concretions, each about the size of a pearl-barley-seed; some appeared to be cellular, of a brownish-white colour, others were solid, and more like round oval pieces of phosphate of lime.* Many similar bodies were observed in the liver, where each lay in a membranous capsule, without exciting inflammation in the surrounding texture. The liver was performing its office, for the vesicula fellis was full of healthy bile.

Serum had been thrown out into the abdomen, and the patient had died of peritonitis.

Case 7.—John Camp. Dec. 31, 1836. He had a bad cough, with expectoration of pus and mucus, a tightness across his chest, a pain in his side, a headach, white tongue, and fever.

Jan. 5. He lies with his eyes half closed, does not answer or expectorate, and is but partially sensible; the pulse is slow and weak, and he is in a profuse general perspiration indicative of dissolution. At night he so far rallied as to become sensible, to speak, and to swallow food.

8. He became still worse, passing his urine involuntarily.

10. His respiration is so difficult, he cannot breathe except in the upright posture. Death.

Sectio Cadaveris.—The lungs adhered closely to the pleura costalis, though they appeared healthy externally; but hard portions of diseased structure were felt in their substance, and about the bronchiæ; although their structure was partly condensed they swam in water; on cutting into them they were full of minute tubercles. The branches of the bronchiæ passing through the neighbourhood of the vomicæ had their mucous lining inflamed as far as it could be traced, even into the air-cells. The parenchymatous substance between the vomicæ and each of the bronchiæ was also red and inflamed. Each vomica was lined by a smooth secreting membrane. Many branches of the bronchiæ terminated in minute tubercles (as seen through the microscope); some of them had ulcerated, others had not. In some of the minute branches of the bronchiæ I found pus, and probably the irritating cause also of its secretion, viz., pieces of calcareous concretion, perforated by small foramina. They were deposited (or at all events found) in the centre of many of the tubercles; similar but more diminutive portions were lodged in several of the vomicæ. Some pieces were more irregular in figure, spongy, and even cellular; others almost solid. I passed the greater part of three successive days in examining these lungs. A few of the calcareous concretions I still have by me.

I shall next remind the reader that towards the termination of inflammations of the tonsils, bronchiæ, and lungs, small portions of tough bluish or greenish albumen are expectorated with the mucous and salivary fluid. In some the expectoration contains calcareous matter, as has been shown.

To ascertain the nature of these concretions I dissolved three of them in muriatic acid; the phosphate of lime was thus removed, and there remained portions of albumen, which in shape, foramina, and size, strictly corresponded with the concretions dissolved. After being deprived of their earth they swam in water, and closely resembled the albumen found in the expectoration. Hence, it is fair to infer that phosphate of lime is, in some cases, deposited into these fragments of albumen that are thrown out after inflammations of the mucous membrane of the trachea and lungs, in the sublingual ducts, on the surface of the liver, and into the coats of arteries; the albumen probably serving as a nucleus for their deposition, in a similar way to what the cellular membrane does after fractures.

Mr. Burford has stated that one of the concretions which his patient examined "contained a thick greenish matter." No doubt this was a portion of discoloured albumen, on which deposition of the phosphate had commenced. Mr. Chandler has, in his communication given us an instance of similar formations in the tonsils; but I conceive he is mistaken in imagining that the concretions described by Mr. B. did not come from the lungs, that being by far their most frequent seat, as shown by the post-mortem examinations detailed in this paper. Nevertheless Mr. C.'s case is not without its value, from the affection he describes being a rare one, and from their occurrence being susceptible of explanation upon similar principles to those found in the lungs.

There is an interesting physiological ex-

* Mr. Goodger has in his collection several irregular depositions, upwards of an inch each in size, all taken from the lungs, which he obligingly let me examine whilst writing this paper.

periment related by Cruveilhier which I think bears strongly on the subject of tubercles and concretions. He states that "mercury injected into the vessels passed to their extremities, was arrested there, and became the cause of tubercles in the lungs." Is not a similar effect at times produced by particles of phosphate of lime in the blood of persons subject to earthy concretions? I have not unfrequently found calcareous matter in minute tubercles of the lungs, and Dr. Baillie states that a considerable portion of the lungs has been known to be changed into an earthy substance.†

The concretions in these cases, though similar in chemical composition, appear to be of two kinds, the one a solid deposition, such as is found lying loose in the bronchiæ, or expectorated; the other such as is found in vomicæ, or cavities lined by a membrane in which albumen has been thrown out; the former generally appear compact, deposition taking place from their exterior; the latter are spongy, cellular, and have foramina, become organised, and are seldom got rid of by expectoration; and it is more particularly this latter form of the disease that ends fatally.

So far as I have observed this affection it has chiefly occurred in the male, and has not begun before 30. The disposition to deposition in the system often is not confined to the lungs, but extends occasionally to the liver, cellular membrane, and to the coats of the large arteries, and is at times accompanied by hæmoptysis.

The symptoms of the disease may be easily collected from the cases given.

As these concretions consist of phosphate of lime, and readily dissolve in muriatic acid, I shall conclude by inquiring how far that medicine might act in preventing further deposition of particles of lime from the blood?

† Vide Baillie's Morbid Anatomy, p. 73.

DR. LITTLE'S CASES OF CONTRACTED FEET.

(Continued from p. 239.)

Case IV.

TALIPES EQUINUS ACQUISITUS.

Shortening of the Gastrocnemii induced by the cicatrisation of extensive Abscesses, which had extended in various directions among the Muscles on the posterior part of the Leg, accompanied by carious Bones, particularly of the Tibia.—Cure, by division of the Tendo Achillis.

Sept. 4, 1837. Miss N——, aged 27, informs me that when about seven years of age she was attacked with some disease in her right leg, accompanied by numerous abscesses, ulcerations, fistulæ, &c., the last of which closed twelve years ago. During the continuance of this protracted disease she was necessarily prevented from walking, so that on its subsiding it was found that the extended state which the foot assumes, owing to the superior power of the gastrocnemii, and other muscles on the back of the leg, overbalancing the anterior muscles when the influence of volition is not exerted, and in which state the foot had, therefore, remained so many years, combined with the gradual contraction of the numerous cicatrices, had produced a permanent elevation of the heel, from the ground to the utmost possible extent. At the present time patient walks upon the extreme point of the sole of the foot, corresponding to the metatarso-digital articulations (see *fig.* 5), where there exists the usual painful corn, which in such feet covers

Fig. 5.

the cutis, wherever it is subjected to undue friction, or pressure; the heel is drawn upwards by the contracted muscles of the calf as much as five inches, which distance from the earth it retains even when the entire weight of the body is thrown upon the affected limb, or the patient strains to force it down; so rigid, indeed, is the contraction, that no efforts which I can exercise to force up the toes, procure the least alteration in the form of the foot. There is no deformity of the foot itself beyond the fixed state of so-called extension, and a somewhat greater convexity of the arch of the foot than natural. All the muscles of the affected thigh and front of the leg are weaker than those of the opposite side; those of the back and outside of the leg are bound down to the bones by eight or ten or a dozen large indented cicatrices, some of them more than three inches in length. She can produce no voluntary power by any action of the anterior muscles, through their being kept continually upon the stretch, nor by the posterior muscles, from some of them being firmly bound down in various parts to the bones, and from the remainder being already contracted to their fullest extent. The entire extremity, owing to the fixed straight position of the foot, is rendered longer than that of the opposite side, although the tibia and fibula being about an inch shorter, by comparison, than they should be, diminish by that much what the excess in length of the extremity would otherwise have amounted to, and, together with the studious efforts of this young lady to conceal her lameness, by walking leisurely, and as much as possible upon the toes of the sound leg, renders her deformity

less evident to the bystander than the accompanying woodcut represents it. She tells me, however, that she is incapacitated from standing long, walking far, or upon a sloping or uneven pavement, without considerable pain and fatigue, and is therefore urgent that I should do an operation for her which she knows has succeeded upon another patient of her acquaintance, who had a deformity of twenty-five years standing. That no true ankylosis of the joint exists is known by the lateral motion which can be given to the astragalus and tarsus, by moving the toes alternately inwards and outwards.

The indications of cure were to divide the tendo Achillis, as in similar contractions from other causes, and by gradual stretching by the appropriate apparatus, to obtain, if possible, the full natural extent of motion of the ankle-joint. There is this difficulty, however, that the lowest cicatrix uniting skin, bones, and tendo Achillis, approaches so near to the insertion of the latter into the os calcis, within an inch of it, and the distance between the anterior surface of the tendon and the back of the ankle-joint, which is occupied in a healthy limb, by yielding cellular tissue, appears from the thickening and induration around the tendon, to be filled up by a dense mass of organised lymph, showing that some abscess formerly extended thither. There was also the necessity of keeping sufficiently far from the bursa, at the insertion of the tendo Achillis upon the one hand, and the objection of traversing old cicatrices with the knife on the other. As, however, I was convinced that with the division of the large inelastic tendo Achillis, and as much of the subjacent indurated cellular tissue as I could, with safety to the tibial vessels and nerve, reach (unless that which might be left undivided were completely fibro-cartilaginous), much more than half of the obstacles to bending the joint would be overcome, I did not hesitate to undertake the treatment of the case upon the same principles as those which guide me in the uncomplicated congenital or non-congenital T. equinus.

Sept. 7. I divided to-day, with the assistance of Messrs. Herring and Rees, the tendo Achillis, using a small straight French bistoury. I passed the knife into the inside of the limb, opposite to the part where the tendon was least engaged by the adhesions, as far from the anterior surface of the tendon as was compatible with the safety of the posterior tibial vessels, &c., one side of the knife being directed towards the latter. The cutting edge was then directed outwards, against the tendon, the point being made to describe a quarter or third of a circle, of which the centre was that part of the blade in contact with the external punctures. By this cutting outwards, and circular motion of the point of the knife, nearly all fibro-cartilaginous adhesions, for they were felt by me to be gristly whilst cutting them, between the edge of the knife and the skin, as well as the tendo Achillis, were divided, as in the method I usually adopt for cutting the latter only, without any puncture being made in the opposite side of the leg. After the withdrawal of the knife two small remaining portions of fascia, or bands of adhesion, were felt through the integuments to be still unsevered; they were cut by reintroducing the bistoury. There was but one wound, a quarter of an inch in length, which healed immediately by first intention, the wound having been dressed and the limb treated as is described in the preceding cases.

On the sixth day Stromeyer's foot-board was applied, without attempting much extension of the remaining resisting tissues of the back of the leg, viz., the tibialis posticus, musculi flexores, and the ligaments of the joint, as I judged it prudent to proceed more gradually than after an ordinary section of the tendo Achillis, and allow the lymph effused in the track of the knife, through the tendon and through the old cicatrices, to become more fully organised, that there might be no chance of exciting any degeneration of the reparatory process, or inflammation, notwithstanding the part was completely healed.

After a few days the cord of the apparatus was slowly tightened, although with very little amendment in the state of the ankle-joint. The patient complained of having restless nights, took a few doses of tinct. opii unavailingly; did not refer the pain she endured from the apparatus to the situation of the lig. deltoideum and fibulare posticum, to the former of which in particular patients, after the operation for club-foot, point as the part where they feel that stretching is going on, but complained chiefly of an acute pain at the back of the fibula, two inches above the malleolus. At the eighth day of carrying on the extension I found, to my disappointment, that the foot was nearly in the same position as before the operation, the heel having descended only a very little; I was certain, therefore, that some unusual impediment to the bending of the ankle existed, and as there was a cicatrix adherent to the bone, and a little inflamed, as if it had been on the stretch, and at the place where she complained of pain and stretching, close to the situation of the tendons of the peronei muscles, I suspected that the latter might be interested in the cicatrix, and adherent to the fibula, although before the operation I believed them to be free; I resolved, therefore, that if a subsequent examination confirmed me in my suspicion, I would divide those tendons lower down than the cicatrix. The bandages and apparatus were removed alto-

gether; the spirit lotion prescribed to be applied constantly to the ankle, and a dose of laxative medicine to be taken, to accelerate the removal of œdema of the parts which obstructed an accurate examination.

On the eighteenth day after the division of the tendo Achillis, when all swelling had subsided, I was able to satisfy myself of the state of things. There was no adhesion of the peronei tendons at the cicatrix, for when the ankle-joint was moved as far as the deformity admitted, I could feel that they were rendered alternately tense and lax, both below and *above* the cicatrix. The latter was still slightly red and puffy; when I attempted to press the toes upwards she had pain there, ranging from the cicatrix to the posterior extremity of the os calcis, and by careful manipulation I discovered what I supposed to be a firm band, passing from the os calcis, or from the inferior portion of the divided tendo Achillis to this lowest cicatrix of the fibula. Pressure in the direction of this band gave pain, as did also, upon repeated trials, the forcing upwards of the toe of the foot.

As my friend Mr. Herring, who was attending the case with me, coincided in my opinion, I determined to divide it between the cicatrix and its connection with the lower part of the tendon, which was done after the manner of dividing a tendo Achillis, except that I introduced the knife upon the outside of the limb. The wound where the knife entered healed the second day, but a minute puncture made by the curved point of the knife, in the posterior median line, was more slow to cicatrise. Stromeyer's footboard was now immediately reapplied, and the same degree of extension which produced before much pain and uneasiness, was borne after this second operation with comparative ease, so that she was able to walk about; the heel gradually descended, and on October 9th, fourteen days after the second operation, she was able to put the heel and entire sole to the ground, which she had not done for twenty years. A lighter modification of the apparatus was worn three weeks longer to support the joint whilst walking about, and also, although the foot had now acquired, in the eye of a cursory observer, a perfectly natural form, to endeavour, if possible, to bend the ankle beyond a right angle with the leg, and obtain the full extent of natural motion. The wearing of this latter instrument occasioned not the slightest uneasiness; it was rather a source of ease to her, for when the foot was allowed to hang loose, owing to the anterior muscles of the leg having been so many years elongated, and therefore unable to hold the foot in the bent state, she, as all patients for a short time after the operation do, felt pain from motion of the recently disturbed parts about the joint, ligaments, &c.

Nov. 5. All apparatus laid aside, and patient is now walking about with a common shoe on; her gait is like that of a person just recovered from a sprained ankle, or broken leg, putting the foot cautiously to the ground, and turning the toes outwards, in which position the ankle is bent as little as possible, to avoid motion of the yet tender ligaments of the joint. Her only complaint is, that her leg feels so much shorter than it was formerly, or than the other now is, the bones of the leg, as was stated at the commencement of this report, being nearly an inch shorter than those of the opposite extremity; but the impression whilst walking is, that the limb is at least three or four inches too short, which arises from a false sensation, depending upon the former greatly elongated state of it. Her spinal column and pelvis, and the vertebral and pelvic muscles, had accommodated themselves to the unnatural length of the deformed limb, and therefore as the ankle-joint is restored to its proper action, and the limb shortened as much as the heel was formerly elevated from the ground (five inches), it is not surprising that the change to her feelings should be so remarkable, and the nature of it so deceptive. A bystander would remark, that even now that the foot is cured, and she has been walking about upon the heel three weeks, the shoulder of the affected side is thrown higher than the other, so slowly do the pelvis and vertebral column right themselves after having been obliged to assume an unnatural position so many years. For her comfort I have informed her that in a short time she will no longer miss the former additional length of limb, and that the only trace of her lameness that will remain will depend upon the difference between the length of the two leg bones.

19. The awkwardness and stiffness of the gait has very much decreased; it is readily observable that there exists a difference in the length of the two extremities, although the exaggerated sensation of shortening has left her. Her shoulders have become more even; indeed that of the lame side is beginning to be the lower. Patient says she is able to stand and walk about the house a large part of the day, without any uneasiness, except a slight pain over the front of the articulation when she happens to throw the whole weight upon the toes in going up stairs. I have carefully examined the state of the muscles of the leg to-day; no depression or enlargement indicates the situation where the tendon was divided; she can contract her gastrocnemii at will, and, assisted by the other posterior muscles, draw up the heel; the action of the peronei is perfect in drawing the toes outwards; and, what is of still greater interest, she can, by means of the tibialis anticus, and other anterior muscles, bend the ankle-joint perfectly.

The prompt recovery in this case of the power of volition over the tibialis anticus is highly instructive in the study of the ætiology of congenital talipes equinus, and, indeed, of club-foot in general.

In the commencement of my investigations into these diseases, I supposed, as I believe it has been the opinion of the few who have thought upon the subject, that the debility of the anterior muscles of the leg was solely the result of the long-continued over-action of the powerful antagonist muscles, mechanically stretching them, and physically altering the muscular fibres. That the latter does take place to a certain extent is proved by this case, as she was unable to bend the ankle at first; but we see that although the anterior tibial muscle had been mechanically stretched to its utmost possible extent nearly twenty years, on the restoration of the ankle-joint to its proper motion, a few weeks time sufficed for the complete recovery of its power; whereas in other cases, where the same muscle was primarily involved, and which I have watched two years after their cure, by division of the tendo Achillis, I have not perceived that the paralysed muscle has recovered aught of its natural power, although it produced scarcely any impediment to the walking.—(Vide LANCET, March 31, 1838, p. 16).

At the present time she is able to walk or dance, as if the limb had never been contracted.

EFFECTS OF FRIGHT ON THE NERVOUS SYSTEM.

To the Editor of THE LANCET.

SIR:—If you think the following case sufficiently interesting for insertion in your Journal, I hope it will call forth some physiological remarks. I am, Sir, your obedient servant,

WM. ALLISON.

East Retford, May 15, 1838.

Catherine Bower, a pale, delicate-looking girl (a kitchen-maid), aged 16, who had menstruated properly, had a fright in May, 1836. The other servants agreed (unknown to Bower) to alarm her by representing a ghost. The representation was managed skilfully, and the girl was surprised and exceedingly agitated. General tremor, with palpitation of the heart, was the consequence; so that she must have had a sudden and violent shock. During some months afterwards she often felt alarmed, with a fluttering at her heart and stomach.

Oct. 12, 1836. I was desired to see her; she complained of frequent vomiting, and of being unable to retain any food; with occasional pain at her stomach, for which she took—

Comp. ext. of colocynth, with *calomel*; *Rust of iron*, with *rhubarb and soda*.

13. Had sonorous breathing (occasionally on both expiration and inspiration), more particularly so when she laughed; for then the breathing became quicker, louder, and more involuntary. The noise was not constant. She had pain in her trachea when she laughed, or when the noise was louder.

Calomel, ten grains; and a purging draught.

14. The breathing became louder, and the noise more constant, with continued pain in the trachea.

V.S. ℥xx. (buffy); *hydrocyanic acid*; occasional active purges.

She gradually improved until the 21st, when all the symptoms increased.

V.S. ℥xxx. (cupped and buffy); *hydrocyanic acid*; occasional purges.

24. Gradually improving; the vomiting has ceased.

Iodine; purges continued.

The girl had recovered at the end of the month, after repeated doses of calomel pills with draughts or castor-oil.

Dec. 20. Loud and painful breathing returned (perhaps from a cold).

V.S. ℥xx. (not cupped nor buffy); *calomel* and opening draught.

21. The girl was seen by Dr. Scholfield, of Doncaster (who has since inquired after "the girl with the musical trachea"). He wished me *then*, to begin treating the complaint more as a nervous than as an inflammatory affection; but he recommended leeches, nauseating doses of antimony with calomel, a succession of small blisters about the throat, and general bleeding, if it became absolutely necessary.

23. Symptoms increased.

V.S. ℥xxxv. (cupped and buffy); active purges.

The girl soon recovered.

June, 1837. The girl's master and mistress being from home, the other servants determined to try the effect of another fright, thinking that her first illness had not been produced by such a cause. On a Sunday, when the girl supposed that she was left in care of the house, and was making beds, one of the bedroom bells was made to ring, and that was managed by a contrivance which the girl could not discover, so that she became very much alarmed and agitated. The noisy, painful breathing came on.

V.S. ℥xxx. (not buffy); active purges.

She soon recovered, and since that time has had very good health.

May, 1838. I have seen the girl this week, who told me that she never felt right between the time of her first fright and of her first serious illness; that she is sure the second fright brought on her last illness; and that she felt immediate and considerable relief after every bleeding.

She once missed having a monthly dis-

charge, viz., after the first fright, and before the first serious illness.

The pulse was generally quick and soft, but when she had pain in her throat, there was a sharpness in the beat. On two occasions she took a quarter of a grain of muriate of morphia, without any apparent benefit.

It is generally believed that tumours have been cured by having been gently stroked with the hand of a dead man who had been hanged,—that terror has stimulated the absorbents. In the case of Bower, the following questions arise :—

1st. Did the fright occasion an irregular and unusual supply of nervous influence to certain branches of nerves?

2nd. Did those branches distributed about the trachea become so energetic as to set up irritation and inflammatory action in the blood-vessels after the second fright? or, rather,

3rd. Is it possible that the fright might have occasioned inflammation about the trachea if the girl had not been bled?

4th. Could there be so much inflammation about the trachea (with such slight symptoms) on the 23rd of September, 1836, as to occasion the cupped appearance of the blood?

5th. Or could the cupped appearance be occasioned by nervous influence on the blood-vessels?

6th. What other plan of treatment would have answered better?

The first inflammatory action cannot be connected satisfactorily with the first fright, and yet the latter might have produced a predisposition to the former. Inflammation appeared to be a very probable consequence of the second fright, if the affection produced had been left to nature.

I have merely related facts as they occurred; and any opinions upon them will be read by me with interest.

A CASE OF

PES EQUINUS CURED BY DIVIDING THE TENDO ACHILLIS.

By Dr. Gustavus Krauss, *London.*

(*Read before the Medical and Chirurgical Society.*)

G. Bocock, a boy of 17 years of age, in consequence of external injury became affected with an extensive abscess on the calf of the left leg. The mischief extended over the whole of the leg and thigh. He entered St. Bartholomew's Hospital, and was discharged cured after a stay of sixteen weeks in the hospital. The knee, which had been kept in the bent position during the cure of the abscesses, gradually became extended, but the retraction of the heel still remained when the patient placed himself under my care.

The dorsum of the foot was nearly in a line with the tibia at that time, the articulating surface of the astragalus being very prominent, and the heel being entirely drawn up. The patient walked upon the toes, resting upon the anterior extremities of the metatarsal bones, and the foot offered a true example of pes equinus in a high degree. On the internal side of the gastrocnemii muscles a tight and hard cord existed; the knee could not entirely be straightened; it formed a slight curve, the tendons of the semi-membranosus and semi-tendinosus muscles forming a very prominent cord behind it. A cicatrix extended over the back of the leg and the lower part of the thigh.

Dec. 4, 1837. The tendo Achillis was divided by means of a convex knife. The blade was inserted in front of the tendon with the edge directed towards it so as to cut through it from before backwards, without dividing the sheath or the skin behind it. The foot was maintained in a position favourable to the union of the divided tendon by the instrument intended subsequently to effect the extension.

6. The wound was healed, neither local inflammation nor any symptom of constitutional irritation having taken place. The space between the two ends of the tendon can be distinguished by its softness and by its livid colour. I began with precaution the extension of the foot.

10. The foot forms with the leg an angle of about 110°. The intermediate substance seems pretty strong but thinner than the ends of the divided tendon.

13. The foot forms a right angle with the leg, and the articulating surface of the astragalus has recovered its natural position opposite to the articulating surface of the tibia.

16. The patient began to walk supported by another person.

20. The foot can now be bent to an angle less than a right angle. Some œdematous swelling has taken place on the foot, extending over the ankles, and also enveloping the tendo Achillis. For the last two days the patient has left his bed.

25. The œdematous swelling somewhat diminished. He walks better.

Jan. 24. The œdematous swelling entirely removed. The intermediate substance can be distinguished by its smaller volume. The patient walks well with a stick, but he rests the point of the foot at first on the ground, and the heel afterwards. The left inferior extremity is about an inch and a half shorter than the other.

Since the beginning of February the patient wears his instrument only at night. He walks now without the aid of a stick a distance of three miles and more. The curve of the knee had much improved. The tendons of the semi-tendinosus and semi-

membranosus muscles are no longer prominent.

Allow me to make a few remarks on the subject before us.

First. The preceding case proves the truth of the physiological law that muscles exposed to extreme long-continued traction become transmuted into a fibrous texture.

Second. I prefer a convex bistoury for the section of the tendo Achillis to the concave bistoury employed in Germany, because it corresponds with the shape of this tendon. But for dividing other tendons the concave bistoury is generally preferable to the convex.

Third. The proceeding of Dr. Duval, to divide the tendon from before backwards, is preferable to the contrary method, because

1. It is the most expeditious.

2. The amount of structure divided is much less.

3. The section of the tendo Achillis in a number of bodies has shown me that the sheath of the tendon is only punctured by this method in a dimension equal to the external incision through the skin. The portion of the sheath covering the tendon behind and opposite to the incision, remains uninjured.

4. Experience has also shown me that sudden retraction of the tendon accompanied by noise will often occur whilst some portions of its fibres remain still undivided. In cutting from before backwards, if the knife is inserted in the proper manner, the surgeon will be enabled to avoid this disadvantage with a certainty which he cannot obtain by the contrary method, because in the latter case it is impossible to discover whether any portion remains undivided under the knife.

Fourth. It is not seldom that in the course of the application of the instrument, an œdematous swelling of the foot takes place in consequence of the pressure. This does not prevent the application of the instrument in the usual manner. The œdematous swelling disappears when the cure is accomplished, and when the continued extension and pressure is no longer necessary.

Fifth. Care must be taken in the course of this treatment of pes equinus that the astragalus does not turn inwards or outwards, and the pes equinus become converted into valgus or varus. This accident may be prevented by a well-conducted application of the instrument.

Sixth. The contraction of the tendons of the knee, which not unfrequently occurs in pes equinus, in consequence of the greater length of the limb, gradually diminishes after the cure of the club-foot, and seldom requires the division of these tendons themselves.

Seventh. The difficulty of the cure of varus and valgus depends upon the age of the individual, and the degree of the deformity. The cure requires practice and the well-conducted application of proper instruments.*

I have lately divided, in a case of very deformed varus, in an individual of 22 years of age, the tendon of the tibialis posticus muscle, and the contracted plantar ligament, which latter operation, I believe, has not yet been performed either in France or in Germany. The operation was not followed by inflammation, and the improvement of the shape of the foot was very decided.

ANOMALOUS CASE.

To the Editor of THE LANCET.

SIR:—Would you oblige me by publishing in your periodical the following case.

Yours most truly,

JOHN HALL, M.D.

Airdrie, Scotland, April 28, 1838.

W. W., ætat. 12 years, even at this early age has followed for two or three years the weaving trade, had good health previous to present attack; was seen by one medical man two days before I saw him for the first time, which was on the 15th Dec. 1837. The medical gentleman at that visit, for some reasons of his own, of course, recommended a blister to the thorax, with some compound preparation of aloes, which, according to accounts, only aggravated his complaints. When I first saw him he laboured under the following symptoms: Distressing pain in his head, which is principally confined to the occiput, but also partially occupies the vertex, and occasionally the frontal region; when the head is inclined forward the pain is evidently aggravated; when giving a sudden nod with his head, or when it is agitated by a second person, the pain then amounts to excruciating torments, making him cry aloud for a few moments. Pupils are much dilated, and conjunctiva of a pearly hue. Complains of pain in and at the back part of his eyes; has ringing in his ears of a morning when he awakes; has a white, furred tongue; urgent drought; and has retching, and great inclination to vomit; has extreme pain in the nape of the neck, or thereabouts, which I first considered merely muscular, but, upon examination, discovered that it was the spine which was the seat of the affection; the vertebræ are very sensible on pressure, particularly the last cervical and first dorsal, which he can hardly bear being touched; pain complained of as being more or less over the whole spinal column. Complains of pain in the region of the kidneys, which, he says, in comparison of the others, is trifling; but the pain is very sensibly felt, not only by the patient when he lies untouched, but when pressure is made it is evidently increased. Pain in the

right shoulder, evidently symptomatic of renal disease. Urine very high-coloured, sometimes depositing a sediment of urea; has considerable difficulty in making water, but does not complain of any pain when this process is being gone through. Bowels, which before had been rather constipated, have been rendered loose in consequence of the pills given him by his former adviser. Is very weak and emaciated, and sweats profusely at night; has the hectic flush on an evening, or something decidedly resembling it. Takes sleep by fits and starts, which is much disturbed by dreams, and very often awakens suddenly crying. Pulse about 109, full.

Let the head be shaved, and a cold spirit lotion be applied; two leeches to each renal region. *Castor oil*, 1 oz.

16. Medicines operated well; leeches bled rather profusely; pain over the kidneys still continues much the same, but thinks the pain in head better; did not hear the ringing in his ears this morning; not so weak, he asserts, as he was yesterday.

Apply a blister to the part.

17. Feels better; pain has entirely gone away in the region of the kidneys since last night when the blister rose; can now bear considerable pressure over these regions; water has not been seen unnaturally high coloured since the leeching; pain in head and neck very severe.

A seton to the neck.

Sulphate of quinine, half a drachm;
Aromatic sulph. acid, half an ounce;
Tinct. of squills, two drachms. Ten drops thrice a day.

18. Issue not inserted yesterday. Mr. Rogers, my friend, saw the patient to-day. Examined spinal column, and we both recognised decided tenderness on pressure. Pulse 98; tongue white and moist; with Mr. Rogers's assistance I inserted in the nape of the neck a considerable sized seton in the ordinary mode.

Continue remedies. A dose of salts and senna in the morning.

20. Continues to improve; pain in head a great deal better; can bear considerable pressure along the spinal column; gets better sleep at nights, and is considerably amended as regards his strength. Seton doing well.

Continue remedies. An alterative pill every third day.

22. Seton now discharging copiously; complains to-day, for the first time, of pain in his joints, those of the hands and knees in particular, also of an inability to use his limbs freely, which he noticed for the first time last night; tongue white; pulse 110, thready; has slight symptoms of a dropsical effusion.

Supertartrate of potass, 57 grs.;
Nitrate of potass, 36 grs.;
Squill, in powder, 18 grs.;
Powder of digitalis, 9 grs.;
Ginger, 18 grs. Divide into nine powders; one thrice a day.

24. For the first time discovered small nodules all over his joints, but the patient describes them as being extant two days; the hands in particular are affected by them. These nodules are evidently deposited from the periosteum; having dissected one or two of them, I find them of a calcareous nature, and am of opinion they are situated between the bone and that covering; they are intensely painful to the touch. Feels very sick at heart. Ordered a cordial, to be repeated if found necessary.

Continue remedies.

26. Pretty much the same, only the sickness complained of at last report, has never returned.

Continue remedies.

31. Complains of great palpitation of the heart; pulse 130, full and strong; tongue white; urine quite natural; hydrops still continues partially; had a short attack of very severe headach this morning.

Bloodletting to 12 ounces.

Supertartrate of potass, one drachm;
Senna, one scruple;
Sulph. of magnesia, half an ounce. To be taken at once. Omit the pill.

Jan. 1, 1838. Palpitations of heart a great deal better. Feels considerably easier, and more comfortable; wants to rise, which liberty was sternly and peremptorily refused. Only the pain in his joints is troublesome; these calcareous nodules are greatly increased in number, and still very painful to the touch.

Gentian, two drachms;
Cinchona bark, three drachms;
Sarsaparilla, one drachm. Add one pound of water, boil down to one-half; a cupfull every morning.

10. Continues greatly improved in his general health; has little or no thirst now; seton was to-day withdrawn, and wounds touched with caustic; ordered to be poulticed and afterwards dressed. The nodules on his joints worse, more painful, and larger in size; cannot sleep at night for them; thinks if it were not for them he would be able to go to his employment.

Corrosive sublimate, one grain;
Water, one ounce. A teaspoonful thrice a day.

11. His joints are not so sore he thinks to-day, but it may be only his imagination, as he winces from my touch as much as he did before, and when he is touched he cries aloud. Had a comfortable night's sleep; is free from pain or even uneasiness in the head and back, and has not now the frightsome dreams he experienced some nights previous; tongue not amiss; pulse 89, weak, but regular; palpitation has not been felt since he was bled; bowels rather confined.

Castor-oil, one ounce.

19. On pressing his joints now he does not complain of severe pain, nor does he wince from my touch, as he was wont to do; the nodules have become less in size; they are, I think, in the process of being absorbed. He is now getting out of bed and walks very well through the house; is free from pain of any description.

20. Mouth a little affected, continues in good health, and is free from pain; takes his meals well; tongue clean; pulse natural; bowels regular; nodules have nearly disappeared, and are insensible to the touch.

Omit the mercury; continue the other remedies.

22. He is now completely relieved in every point of view; bowels a little confined.

Sulph. of magnesia, one ounce;
Sulph. of potass, four drachms.

SKETCH
OF THE
LIFE OF JOHN MILLER,
AUTHOR OF
"DISCOVERIES IN EMBRYOLOGY."

In The Lancet of April 7, 1838, we published a paper from the pen of Mr. John Miller under the title of "Discoveries in Embryology." That paper attracted the notice, and obtained the admiration, of some of the most distinguished members of our profession. On this occasion we purpose presenting to our readers a brief sketch of the life of Miller, to which will be added a short statement, written by himself, of some interesting circumstances which have been connected with his important and highly interesting pursuits. Too often has it happened, in this country, that men of genius have been permitted to struggle on in their labours, oppressed by poverty, and surrounded by an immense number of perplexing difficulties, without receiving from the lovers of science that aid and assistance which were so justly their due. When we reflect on the fact that hundreds of thousands a year of the public money have been bestowed on worthless persons who have never rendered to the community a single service, is it not humiliating to know that a legislature, which is said to be actuated by paternal motives with reference to the entire population of the kingdom, has always abstained, until within the last year, from setting apart any fund which might be awarded to men like John Miller, whose labours are calculated to prove of so much service to the highest behests of science, and the best interests of mankind. The following brief history will present ample materials in proof of the fact that there cannot be a greater cruelty inflicted on a human being who possesses superior powers of mind, and capabilities for conducting interesting researches in science, than to condemn him to struggle on, probably, during a long life, relying entirely on his own resources for the prosecution of his inquiries. In such a case the appetite for acquiring knowledge becomes to the individual a curse rather than a blessing, and every fact which such a man contributes to the increase of useful and valuable information is obtained at the cost, often, of an agony and torture of feeling which none but himself can appreciate or duly understand:—

John Miller, æt. 38, was born in or about the month of April, 1800, in Glasgow, of very humble parents. His father was a labourer, and his mother kept a small public-house for the sale of whisky. Having been taught to read and write during an occasional attendance at school, he was, at the age of 13, bound apprentice to a plasterer. During the period of his servitude he enjoyed the privilege of attending the lectures which were then delivered by Dr. Ure, at the Mechanics' Institution, whence a strong taste for scientific information was fostered in his breast, which, gradually augmenting, he began to disdain the trammels of mere handicraft. Previously to this, however, when assisting his master in the erection of the new class and dissecting-rooms for the anatomical professor in the University of Glasgow, his attention was arrested by the various objects which were contained in the Hunterian Museum, to which he had frequent access. An attendance during three winter seasons on Dr. Ure's lectures, comprising, as they did, natural philosophy and the outlines of chemistry, had supplied him with a considerable portion of elementary information; but, during this period, he was so frequently employed in repairing

and decorating buildings in different parts of Scotland, that he was left no opportunity to digest the information thus obtained. Reading was out of the question with him; such leisure as he could command, was chiefly occupied in attempting to perform chemical experiments. His first essay was exhibited in the formation of hydrogen gas to fill some small balloons which he had constructed in consequence of witnessing the ascent of Mr. Sadler at Glasgow,—a novel proceeding in that city. In the Hunterian Museum the objects of natural history especially excited his attention, and many were the insects, birds, and animals which he stuffed and preserved. On one occasion, on a visit to Illingsborough, he found a sea-frog, which a spring tide had left in a hole in a rock. This he skinned, dried, and took to Glasgow, and by its exhibition enabled his mother to sell nearly £20 worth of whisky.

His apprenticeship having expired, he abandoned an occupation which was always uncongenial to his taste, and unproductive of advantages to his mind, although it certainly afforded him facilities for learning to work in plaster, which ultimately proved useful to him. He then (1820) came to London, in the expectation of obtaining employment, which he procured in the service of Mr. Bernasconi, thereby obtaining admission to the Pavilion at Brighton. In this palace he worked for a considerable time, and he subsequently continued in the employment of other persons in his trade, but still without any opportunity being afforded him for the exercise of his ruling passion; but about the year 1827 public attention was directed by advertisement to the delivery of anatomical lectures at the Mechanics' Institution, in London. The opportunity thus afforded him of acquiring knowledge, he eagerly embraced, and, with hundreds of other mechanics, he enrolled himself a member of the institution. Besides the lectures and demonstrations furnished by Dr. Birkbeck, the "Morning Chronicle" and "Morning Advertiser" newspapers gave ample reports of the subjects propounded, and these articles were read, and the points discussed, by the members with an energy and ardour rarely equalled. A taste for anatomical investigation was now engendered in the institution, and so great was the degree of enthusiasm evinced, that Miller and several of his companions (the scarcity of bodies being great) resolved upon willing their own bodies for dissection after death. Not knowing what better method to adopt to be enabled to prosecute his new impulses, he concluded upon becoming a porter to a dissecting-room, and, with this view, applied to Mr. Green, of St. Thomas's Hospital, at that time residing in Lincoln's-inn-fields. This gentleman received Miller kindly, but conceiving that the new-born feeling might not long survive its birth, he dissuaded him from his design, and recommended a return to his original employment, urging its lucrativeness and comparative cleanliness, above the office he sought. However, he assigned a period of probation to Miller, but before it had expired he sent for Miller, and inquired whether his intentions were such as he had formerly expressed. On an affirmative answer being given, Mr. Green took him to St. Thomas's Hospital, where Miller commenced making casts and models of preparations for the lectures of Mr. Green, and was thus employed above a year. At the expiration of that time, his services being no longer required, he began making anatomical preparations and models for himself. His first performance was the dissection of a horse's leg, facilities for obtaining parts of animals being far greater than those for procuring human subjects. The models made from these dissections he sold to different persons, and maintained himself upon the produce. His reputation in this department occasioned an introduction of Miller to Professor Coleman, who employed him to make a series of models from dissections of the horse's foot, to illustrate that gentleman's lectures. These models now exist in the Royal Veterinary Museum. Mr. Goodman, having seen these specimens of his art, next engaged him (this was in the year 1829) to model an interesting case of intussusception in a favourite horse belonging to George the Fourth. The details of this case are to be found in Vol. II., No. 21, of the "Veterinarian."

Dr. Southwood Smith, at about this time, delivered a lecture on poisoning, at the Mechanics' Institution, which still further roused Miller's attention, and directed his researches towards the effects of poisons on the stomach. This necessarily led him to investigate the different appearances pro-

duced by poisons upon the mucous and other coats of that organ, and the intestines, and the models formed from his numerous preparations now adorn many of the museums of this metropolis, in which, previously to the stimulus thus imparted, few or none of a similar kind were to be found, as it is well known that the branch of pathological science to which they relate was then (1821) scarcely cultivated.

Miller's character now became known to other anatomists and physiologists, especially to Mr. Langstaffe, by whom he was employed in making models of preparations, and through whom Miller's knowledge of minute anatomy and dissection was almost entirely derived. To this gentleman he was also indebted for daily sustenance when almost every teacher in London refused to render him any service, and withheld the assistance of which, at that time, he so much stood in need.

Subsequently, Messrs. Grainger and Pilcher permitted him to have free access to their dissecting-room, and afforded him facilities for improving his information on anatomy in their museum, and afterwards continued to foster his efforts.

He next visited the museum at the College of Surgeons, and, on examining its contents, found that of all the branches of physiology of which it contains specimens, that of embryology was almost without illustration. Hence he determined to investigate the subject, and his inquiries have led to the important results with which our readers have been, in some measure, recently made acquainted.

In 1833 a controversy, in which Dr. Robert Lee figured, respecting the connection between the placenta and the uterus, induced him to investigate that point; and this inquiry also led him to make some important discoveries, and enabled him to promulgate (privately) a valuable practical fact in obstetrics, namely, the mode of arresting one kind of uterine hæmorrhage, by a peculiar manner of separating the placenta, planned with reference to the distribution of its vessels.

The want of subjects, the deficiency of pecuniary means, and the reluctance of medical and anatomical teachers to aid his efforts, impelled Miller, from time to time, to adopt various expedients to obtain materials for his researches. He made himself acquainted with many nurses, and by bribes, poor as he was, varying in amount from 2d. to 6d., according to circumstances, he succeeded in obtaining many things which it fell within their province to command. His directions to them always were,—"bring me anything that comes away from a woman,"—in the hope particularly of obtaining abortions. In like manner he employed boys who resided in Drury-lane, and other such parts of the town, to bring him animals of all sorts when in a state of pregnancy. In process of time, however, he himself arrived at what he regarded as a point of importance, namely the becoming a breeder of puppies, cats, rabbits, &c.!

To support himself and his house he usually employed three days in each week in making casts, attending inspections, and dissecting, and putting up preparations (for a very poor remuneration, however,) for other persons, and the remaining period he devoted to the pursuit of his favourite subject, the investigation of embryology. He has at all times felt indisposed to obtain the proffered aid of persons from whom he did not conceive himself to be entitled to receive remuneration, although, to the credit of some gentlemen who have been personally acquainted with his state of destitution, assistance has been offered. His opinion upon this point was, that a person who receives assistance of a pecuniary nature is not a free agent, and cannot feel that degree of independence which an original thinker ought to display.

Such is the history of Miller's progress in life.

Miller's Statement, &c.

Many inquiries have recently been made why I now, for the first time, come into public notice. I showed a small human ovum, with the germinal disc (I believe the only one known in Europe), to several professional men, and told them I would publish an account of it. To this it was remarked that the physiologists on the Continent would not believe the specimen, I being a mechanic, and not in the profession; notwithstanding this, however, professional members in London may credit my assertions, as they know I was engaged in the investigation. Under this impression I was recommended to show it to the heads of the profession in the Colleges. I inquired who "the heads" of the profession were, and was told that they were the *respectable* men of the profession!! I remarked that I differed from most men on embryology; that few or none had any real knowledge of it,

and that the treatment I had received from those who had, would deter me from imparting my ideas to such persons. I observed that money was not knowledge, nor knowledge money; that if a man wished to have his likeness painted, or his bust modelled, he necessarily desired to have from the artist some specimens of his art, to judge of his pretensions accordingly. If the "heads, &c." alluded to, had any knowledge, or any specimen of their own labour to produce, I could in like manner judge how far deference should be paid to their opinions; but I could find no man in London who had investigated the subject.

I then stated it was my intention to call on the editors of the weekly journals, and request them to examine the preparations before they noticed them, to prove the truth of the drawings, and the description in the paper which I have lately published, for surely what men of such credit would vouch for, no one would dispute. This I afterwards did, and I return my grateful thanks for the kind manner in which I have been received, as well as for the kind advice accorded, some of them showing me at the same time the difficulties I had to contend with from not being in the profession. I can now congratulate them and myself, from the letters I have received, that the medical public does believe my labours productive of truth, without being backed by the said "heads."

Mr. Owen called to inspect my collection, which I would not suffer him to do, knowing that he was at the time investigating the subject of embryology. He asked me what was the appearance of the smallest human ovum in my series. I showed him the appearance in a small model of wax; when he said that he would not believe that the appearance which I represented really existed. I told him that I did not want him to believe it; that "the question was which was the best of us two for reaching the winning-post; and that I had studied human nature too long to be caught in the trap that he was anxious to lay for me." He said he would give me his hand as a gentleman that he had not investigated this subject. This took place at the end of July, 1837, and on the 22nd of August following Mr. Owen read a paper on the uterine fœtus of the kangaroo at the Zoological Society, wherein he described the alantois as being the vesicula umbilicalis!! If I had shown him any of my dissections of animals, he would soon have seen the difference, and would probably have done with me what he has done with M. Coste. Three weeks did not expire between his visit to me, and the reading of his paper! What can be thought of such a man as that? I did exhibit to him my preparation of the human ovum, in which the omphalo-mesenteric artery and vein are shown, which he then saw for the first time in his life, *according to his statement to me*; and then he remarked that the Hunterian collection was to be made as complete as possible; that I ought to make money when I could; that the College would be ready to purchase my preparations. I replied that they were not made for sale, but that I might, perhaps, *give* the collection to the College, if a niche were given to me in the Museum, with permission to erect a tablet above it. The tablet, I said, should record "That the Collection was made by JOHN MILLER, a poor MECHANIC, often with an EMPTY BELLY, and WITHOUT SHOES TO HIS FEET, from having spent his limited earnings in completing his investigations, and without a friend in the world to help him." Thus encouragement might be given to any other lover of science to do as I had done before him; showing, likewise, that men should be judged and estimated by their labours, and not by the titles which follow their names, for titles are often obtained by intrigue.

Mr. Owen said he would come to my room and assist me in the dissection of the gravid uterus (I have examined sixteen); I told him that he was at the fountain head, where all the money was; and that, of course, where all the money was the knowledge must be presumed to be also, but that for myself I had neither knowledge nor money, consequently that I could not enlighten *Mr. Owen!*

I cannot but thank those members of the profession who have given me opportunities of examining gravid uteri, since, from my researches, has arisen one of the most important practical facts relating to midwifery of which modern science can boast; namely, the power of arresting uterine hæmorrhage. I have explained the mode of doing this to several teachers and practitioners in midwifery, and all have congratulated me on the discovery, while several of them have testified to its practical application and utility. To them, as I am not a professional man, I leave the task of putting it into practice and reporting upon its truth. It is somewhat strange that the discovery was not sooner made; but I must confess that I took the original idea from John Hunter, who adverts to the position of the vessels in the placenta and chord, and states the universality with which they run in one direction only.

Dr. Robert Lee has questioned the opinion of the Hunters taught during the last forty years, as has Mr. Owen, also, in the "Phil. Trans.," 1832. Dr. Ramsbotham, in the "Med. Gazette" for January 25, 1834, p. 613, states as follows:—"I consider the observations of myself and Mr. Luke have borne out Dr. R. Lee." It is a most deplorable picture in science to see such men question the opinion of Hunter, without producing a single preparation of their own

to prove their allegations. When I invited these gentlemen to come and see the truth of the position as to the vascular connection between the placenta and the uterus, they would not come, but preferred to remain in their ignorance. Yet these are the men who endeavour to steal laurels from the head of Hunter, whose shoes they were unworthy to loose.

Amidst the privations I have suffered, and the mortifications and rebuffs I have undergone, it is pleasing to me, and it is but an act of justice to the gentlemen, to state, that to Mr. Green, Dr. Moore, Dr. Fergusson, and Sir Astley Cooper, I am under the greatest obligations. Encouragement, good advice, and incentives to perseverance, with pecuniary assistance in times of great distress, I have always received from them, in their different departments; nor is it too much to attribute to their influence my determination not to be borne down by despair.

PRIZE DOINGS AT THE LONDON HOSPITAL.

To the Editor of THE LANCET.

SIR:—Permit me to occupy a few lines of your valuable periodical, upon a subject which requires much correction, and which, perhaps, would be the better for some reprehension,—I allude to the uncertainty which the students of the London Hospital experience as to whether the prizes will be awarded to those who deserve them. They pay their money to the teachers for attendance upon their several classes, and are encouraged to believe that they will, in some measure, be remunerated by the honour which is attached to the carrying off a prize; but in many (I am glad to say not in all) instances they are disappointed. A circumstance of this kind has just occurred, and it is one which reflects great discredit upon the professor, and which fully deserves public exposure.

The facts of the case are these:—Drs. Cobb and Davies, conjointly, teach the class of practice of medicine, and have for some time past been in the habit of awarding a gold medal to that student who has proved himself to be most deserving of it; but this year, contrary to all precedence and expectation, it was announced that no prize would be given; but mark! the information was not afforded until the lectures had finished, and the money had been pocketed. You, Sir, who are well acquainted with the feelings that belong to a medical student, can easily imagine the indignation with which such an announcement was hailed. A suggestion was immediately offered, that a subscription should be entered into among the students to defray the expenses consequent upon the bestowal of the usual prize, and that, in this manner, such conduct should be shamed, and the successful candidate be rewarded. A difficulty, however, presented itself so insurmountable, that the accomplishment of their design was prevented. No physician could be found to give the questions and examine the answers returned. The bounds of etiquette would have been broken, and Dr. Cobb would have been offended. I mention Dr. Cobb alone, for the conduct of his colleague, throughout the whole affair, has been quite the reverse of his own. Dr. Davies openly declared that for his part, he was perfectly willing to bestow the prize, but that, as Dr. C. had determined otherwise, it lay out of his power to act differently. Though his colleague in teaching, he has shown he would not be one in meanness and trickery. No! in this Dr Cobb stands alone. He has "dared to be singular," in refusing to share in the bestowal of a £5 5s. prize, and let him enjoy the fruits of his singularity. Perhaps, in a short period, he will not have the opportunity of redeeming his character; for already some of the students have determined to enter either to Dr. M. Hall, or Dr. Hope, in preference, and will the loss of those compensate his gain of £2 12s. 6d.?

I cannot, however, draw to a close without adverting to another abuse which has lately crept in, and which is alike injurious to the true interest of medical students, and profitable to the pockets of the medical professor. The latter class of individuals, in the London Hospital School, have determined that a student cannot deserve a prize unless he has got a competitor; indeed some say unless there are two to contend with him. How far this affects the abilities of a candidate, I am at a loss to conjecture; but such is their determination, and the consequence of it is, that when a student becomes known for the extent of his acquirements, no one is to be found who will enter the lists with him, consequently no examination is held, and of course no prize is awarded. It does not at all matter how hard he may have worked, how well qualified, or how willing he may be to undergo the severest examination, yet if he has not an antagonist he cannot deserve the prize. An instance of this kind has occurred in the anatomical class this year.

In the sincere hope that by bringing such practices before the notice of the public their repetition may be prevented, I beg leave to subscribe myself yours respectfully,

OBSERVER.

May 1st, 1838.

Medical History and Statistics of the British Legion in Spain; comprising the Results of Gun-Shot Wounds in relation to important Questions in Surgery. By RUTHERFORD ALCOCK, K.T.S., &c. &c.

(Concluded from p. 224.)

THE most important part of Mr. Alcock's statistical statements refers to the surgical tables compiled after the return of the Legion to the Sea Coast. The work before us is full of interesting calculations, but we must confine ourselves to a few tables which throw a satisfactory light upon the following points of inquiry, For minute information we refer the reader to the volume itself :—

a. The average mortality in any given number of wounded from musketry, principally.

b. The ultimate loss to the effective strength of an army, with total number wounded, and in various classes.

c. The proportion the different classes of wounds bear to each other, the tables including the wounded of a force attacking and defending fortified places, as well as engaged in open actions.

d. The relative value of primary and secondary amputation.

e. The proportion of cases of secondary hæmorrhage, and of tetanus in wounds.

(*a.*) *General Return of Wounded admitted into the General Military Hospital San Telmo, San Sebastian, from* 14*th May* 1836 *to* 10*th June* 1837.

Nature and State of Wounds on Admission.	Number Admitted.	Discharged to Duty.	Transferred.	Invalided.	Died.	Remain.	proportion of Deaths to Cases.
G. S. F. of cranium with lesion of contents	18	.....	....	....	18	....	1 to 1
..... without lesion	10	5	....	1	4	....	1 to 2½
Abrasion of pericranium	3	.....	2	....	1	....	1 to 3
Scalp Wounds	58	52	3	2	1	....	1 to 58
P. G. S. W. of thorax, with lesion of contents	29	.....	....	2	27	....	1 to 1
..... without lesion	9	2	....	5	2	....	1 to 4½
P. G. S. W. of abdomen, with lesion of contents	18	.....	....	....	18	....	1 to 1
..... without lesion	1	.....	....	1	....	....	0 to 1
Pg. thorax and abdomen, with lesion	3	.....	....	....	3	....	1 to 1
Pg. wounds of joints	37	2	2	11	21	1	1 to 1¾
Amputations in the field	15	.....	2	8	5	....	1 to 3
Wounds of spine	2	.....	....	....	2	....	1 to 1
G. S. F. of femur	20	.....	2	05	12	1	1 to 2
.....leg	37	6	1	29	20	1	1 to 3
....arm	31	1	....	18	11	1	1 to 3
.....forearm	52	12	7	30	3	....	1 to 17½
General wounds, severe	403	146	113	96	45	3	1 to 9
..... slight	585	548	34	....	3	....	1 to 195
TOTAL	1351	774	166	208	196	7	1 to 7

"Mr. Guthrie's estimate of the ultimate loss to the effective strength is 1 to 3 of the total number treated. The rate in which the loss after an action decreases in each succeeding month after the first, taking the average upon the whole number of 1350, is as follows :—

Return to Duty	Total Number treated.
By the end of 1st month	1 in 5½
.... 2nd	1 in 2½
.... 3d	1 in 2
.... 4th	1 in 2
.... 5th	1 in 1¾
.... 6th	1 in 1¾

"The sixth month generally giving the ultimate gain to the effective force."

The accompanying table shows the proportion of the different classes of wounds to each other, and to the whole number wounded, resulting from an action. This table alone is not sufficient to establish a universal average ; but six such tables, accurately drawn up, would afford a sufficient basis for an exact conclusion. This is not a mere question of curiosity, but of practical importance, affecting all the preparatory arrangements of hospitals, as regards medicines, apparatus, stores, &c.

(*b.*) *Return showing the Proportion Wounded in different Classes in the principal General Actions from 5th May* 1836

(*b.*) *Return showing the Proportion Wounded in different Classes, in the principal General Actions, from 5th May* 1836, *to June* 1837.—(*Fractional parts omitted.*)

CLASS OF INJURY.	Legion attacking Lines, May 5. No. Wounded, 382.	Legion attacked in Lines, June 6. No. Wounded, 66.	Legion attacked in Lines, October 1. No. Wounded, 158.	General actions in position and skirmishes, from March 10 to 16. No. Wounded, 490.	Assault of Irun, May 16 and 17, No. Wounded, 83.	Total. 1179.	Average Proportion.	Average proportion on the whole Number, 1351.
Head :—								
G. S. fracture of cranium with lesion of contents	1 in 382	1 in 33	1 in 17	1 in 98	0 in 83	....	1 in 69	1 in 75
..... without lesion of contents	0 in 382	1 — 66	1 — 79	1 — 61	0 — 83	....	1 — 131	1 — 135
Abrasion of pericranium	0 in 382	0 — 66	0 — 158	1 — 163	0 — 83	....	1 — 393	1 — 450
Scalp Wounds	1 in 38	0 — 66	1 — 17	1 — 16	1 — 41	....	1 — 23	1 — 23
TOTAL	1 in 35	1 in 12	1 in 8	1 in 11	1 in 41	....	1 in 14	1 in 15
Penetrating wounds of trunk :—								
P. W. of thorax with lesion of contents	1 in 54	1 in 66	1 in 19	1 in 81	1 in 20	....	1 in 45	1 in 46
..... without lesion	1 in 191	1 — 66	1 — 31	0 — 490	0 — 83	....	1 — 147	1 — 50
P. W. of abdomen with lesion of contents	1 in 191	0 — 66	1 — 158	1 — 61	1 — 41	....	1 — 60	1 — 75
..... without lesion of contents	0 in 382	0 — 66	1 — 158	0 — 490	0 — 83	....	1 —1179	1 —1351
..... of abdomen and thorax	0 in 382	0 — 66	0 — 158	1 — 163	0 — 83	....	1 — 393	1 — 450
TOTAL	1 in 34	1 in 33	1 in 10	1 in 28	1 in 13	....	1 — 23	1 in 22
Penetrating wounds of joints	1 in 31	1 in 33	1 in 52	1 in 30	0 in 83	....	1 in 35	1 in 36
Wounds of spinal column	0 in 382	0 — 66	1 — 158	4 — 490	1 — 83	....	1 — 589	1 — 675
Compound fractures of extremities :—								
G. S. fractures of femur	1 in 27	1 — 66	1 — 158	1 — 245	1 — 83	....	1 — 62	1 — 67
..... tibia and fibula	1 in 23	1 — 22	1 — 17	1 — 22	1 — 20	....	1 — 21	1 — 23
..... humerus	1 in 31	1 — 33	1 — 31	1 — 40	1 — 83	....	1 — 39	1 — 43
..... radius, ulna, and bones of hand	1 in 29	1 — 33	1 — 26	1 — 17	1 — 83	....	1 — 20	1 — 26
TOTAL	1 in 6	1 in 8¼	1 in 7	1 in 7	1 in 11	....	1 in 7	1 in 8
General wounds, severe	1 in 5	1 in 3	1 in 5	1 in 2	1 in 5	....	1 in 3	1 in 3
..... slight	1 in 1	1 — 1	1 — 2	1 — 3	1 — 1	....	1 — 2	1 — 2
Cases of tetanus	1 in 63	3 in 66	0 in 158	1 in 44	0 — 83	....	1 in 69	1 in 78
Secondary hæmorrhage	1 in 85	0 — 66	0 — 158	1 — 122	1 — 41	....	1 — 131	1 — 135
..... amputations	1 in 23	1 — 7	1 — 17	1 — 18	1 — 10	....	1 — 17	1 — 14

A table is given of primary operations in the field and in hospital, which resolves itself nearly into a statement of time, the operations on the field being generally performed within six hours; those in the hospital from the sixth to the forty-eighth. They are classed, however, in similar injuries, which renders the table more available for comparison.

Two comparative tables also are given of primary and secondary operations in hospital.

(*c.*) *Return showing the relative Success of Primary Operations performed on the Field and in Hospital, from 5th May* 1836 *to* 10*th June* 1837.

	On the Field.			In the Hospital.		
Injury.	No.	Deaths.	Proportion of Deaths to Cases Treated.	No.	Deaths.	Proportion of Deaths to Cases Treated.
G. S. W. fracture of femur	3	3	1 to 1	5	2	1 to 2
Tibia and fibula	1	....	.....	5	5	1 to 1
Humerus	2	1	1 to 2	5	2	1 to 2
Radius and ulna	2	....	.....	..	....	
Joints :—Knee	..	....	.....	5	3	1 to 1
Shoulder	1	....	.....	3	....	
Elbow	2	....	.....	5	4	1 to 1
Wrist	1	1	1 to 1	1	1	1 to 1
Total	12	5	1 to 2	29	17	1 to 1

(*d.*) *Return of the Capital Operations performed in the General Military Hospital of San Telmo, San Sebastian, from 5th May* 1836 *to* 10*th June* 1837.

PRIMARY.

Nature of Operation.	Number of Operations.	Cured.	Died.	Remain.	Proportion of Deaths to Cases Treated.	Remarks.
Amputation of thigh	17	5	11	1	1 to 1½	Those remaining are out of danger.
leg	3	....	1	2	1 to 3	
at shoulder-joint	5	3	..	2	1 to 1	
of the arm	13	6	7	....	1 to 6-7ths	
fore-arm	3	1	2	....	1 to 1½	
Total	41	15	21	5	1 to 2	

SECONDARY.

Nature of Operation.	Number of Operations.	Cured.	Died.	Remain.	Proportion of Deaths to Cases Treated.	Remarks.
Amputation of thigh	20	7	12	1	1 to 1⅔	The remaining out of danger.
leg	9	9	....	....	0 to 1	
at shoulder-joint	1	....	1	....	1 to 1	
of the arm	9	7	2	....	1 to 4½	
fore-arm	2	2	....	....	0 to 1	
Total	41	25	15	1	1 to 1	
Total of Primary and Secondary Amputations	82	40	36	6	1 to 2¼	

A large part of the foregoing operations were from the actions in March, 1837, and in which the proportions of deaths was increased by endemic fever.

One of the preceding tables indicates the proportion of secondary hæmorrhage and tetanus in wounds; but to make the matter clearer we append the two following abstracts:—

"TETANUS.

"In the action of 5th May, six cases occurred: one after primary amputation on the field. One after compound fracture of tibia and fibula; amputation was performed before the first manifestation of tetanic symptoms. One with compound fracture of the metacarpal bones; amputation was performed after the appearance of tetanus. Three were flesh wounds. In all the cases death was the result.

"From the 10th to 16th March, eleven cases. Six were simple flesh wounds, two of the lower extremity, three of the upper extremity, and one of the trunk. Of these, one recovered and five died. Three were after compound fracture of tibia; one limb was amputated without alleviation; one patient recovered of tetanus, and died subsequently of irritative fever; the third case died also. One was a flesh wound of the lower extremity and fracture of the scapula. One a fracture of the phalanx of the great toe. Thus making eleven in all."

"*Abstract of Cases of Secondary Hæmorrhage, occurring in the General Hospital San Telmo, from May* 1836 *to June* 1837.

"On the 5th May, seven cases occurred: two after amputation of the thigh, secondary. The femoral artery was secured in both instances. In one case the patient died immediately; in the other he died six days afterwards, the hæmorrhage continuing. Three after compound fracture of femur; two were amputated immediately. The wounded artery was not discovered in one instance; in the other, a spicula of bone had perforated the femoral artery; one was cured; the other died of diarrhœa. In the third case, the femoral artery was secured; sphacelus of the foot, and a recurrence of hæmorrhage ensued, from which he died. One gun-shot fracture of the bones of the face, after frequent recurrence, and proceeding to an alarming extent, the hæmorrhage ceased spontaneously. One was a compound fracture of the humerus; the vessel could not be detected from whence the hæmorrhage proceeded. Amputation of the arm was performed, and he recovered."

10th to 16th March. Four cases: two were gun-shot fractures of the bones of the face; the common carotid was secured; both died.

One was a gun-shot fracture of the radius, extending into the elbow-joint; the ulnar artery was divided, from which the bleeding took place; the arm was amputated. Death from fever.

One compound fracture of fibula; secondary hæmorrhage from posterior tibial artery; femoral artery secured. Recovered.

14th May. One case, after amputation of the arm, occurred suddenly, and two vessels were secured. The patient died.

3. Having furnished the reader with statistical details sufficient to enable him to form a judgment of the medical arrangements of the Legion, we proceed to the third division of the subject, viz., the more strictly medical or practical part of the matter. The first object that strikes the attention of the pathologist, is the severe remittent fever which attacked the troops at Vittoria. This disease is thus described by Mr. Alcock:—

"The following was the most usual course of the disease:—The patient felt, for some days, a general sense of lassitude, frequent nausea and vomiting, attended with pain of head, sometimes extending down the spine, and sometimes diffusing itself over the whole body. A disordered state of the bowels, diarrhœa occasionally violent and frequent, was often an attendant. Disabled from performing his duty, the patient would at last report himself; another preliminary stage varied much in duration, from twenty-four hours to as many days. On examining the patient at this period, he was generally found to have a full pulse, flushed face, dry and hot skin, violent pain of the head, a loaded tongue, with total prostration of strength; at other times, purple and livid countenance or shrunken skin. Delirium quickly supervened, the tongue and fauces became dry, and the lips loaded with sordes. Dysentery followed, a rapid decline of the strength of the pulse succeeded, and from the tenth to the twentieth day the patient died. During this period, the feet partially or entirely, and sometimes even the legs, would run rapidly through all the stages of gangrene.

"In other cases dysentery presented the leading feature, and was succeeded by the same fever, running a still more rapid course.

"If, however, the patient improved, one of his first complaints, on recovering from his delirium, was a tenderness and an insupportable sense of heat in the feet, for the relief of which neither bland nor stimulating fomentations, nor friction, nor opiates, general or local, availed. The feet would feel cold to the touch, present no external appearance of inflammation, but they were exquisitely tender. At last, either these symptoms would gradually disappear after menacing inflammation, or finally separate the tips or the whole of the toes, or even the entire feet and legs. The reduced state of the patient rarely allowed any option as

to the performance of amputation before the line of demarcation was formed. Had it been otherwise, I should certainly not have hesitated in removing the limb, at some distance above the highest line of disease. A great number of amputations were performed at the tarsal and metatarsal articulation, and across the metatarsal bones, and also of both legs, for it was rare that one foot or leg alone was involved in the gangrene. These operations were performed under very unfavourable circumstances, on patients debilitated by fever and dysentery.

"The result of the partial amputations of the foot disappointed me; for three months after perfect union the patients were unable to bear any weight upon the stumps.

"Many men presented themselves at the hospital, emaciated, weak, and sickly, after suffering from dysentery, and the toes of one or both feet in a state of gangrene. They always attributed it to exposure to cold on some particular day or night.

"I apprehend the distinctive characters of the Vittoria fever were its frequent commencement as common continued fever, its rapid assumption of the typhoid form, and the rapid gangrene of the lower limbs.

"The diarrhœa and dysentery, with which the disease was often complicated, although acting as a strong predisposing cause, I think formed no integral part of the disease. The causes of dysentery were abundant, and traces of inflammation were frequently met with in the mucous membrane of the intestines."

The treatment which Mr. Alcock found most successful was the following:—To avoid bloodletting; not to be deceived by the bounding pulse, headach, &c., but to apply blisters to the nape of the neck; to plunge the patients (in the hot stage) into a tub of cold water; and, after relieving the stomach and bowels by an emetic and a purgative, to administer mild diluents, saline effervescents, and gentle diaphoretics.

Mr. Alcock alludes to the endemic bilious fever which occurred amongst the troops at San Sebastian, after the untoward actions in March 1837, in the following words:—

"It would be difficult to fix upon any one circumstance as the true cause of this bilio-endemic visitation. The weather was not fine; the troops had been much exposed and fatigued, and the last action was a reverse ending in a retreat. The town, for some time before, had been more crowded than usual, and the great and unexpected influx of wounded, Spanish and English, after crowding to overflowing the Spanish hospitals and churches, where the fever first presented itself, ended by crowding the English hospitals also. Thus was engendered the bilious fever, which swept, like a malignant epidemic, through the Spanish and English hospitals, carrying off nearly all the amputation cases."

The bilious fever described by Mr. Alcock was generally ushered in by a headach, accelerated pulse, hot skin, and furred tongue; occasional irritability of stomach, and vomiting of bilious fluid of a dark colour; diarrhœa, followed by irritation of pulmonary mucous membranes, formation of sympathetic abscesses, deterioration in the appearance of the stump, exhaustion of the vital powers, and, finally, death.

The remedies generally adopted were antimonials, diaphoretics, mild aperients, blisters to epigastrium, leeching, and other abstraction of blood, more or less free, according to the circumstances of the case, and the constitution of the patient, and occasionally calomel and opium, to meet particular symptoms.

Mr. Alcock makes some exceedingly judicious observations upon the question so long agitated, of primary and secondary amputations, which we have not space to transcribe.

M. Boucher, in a memoir to the French Academy, defines three periods for amputation:—1st. The period between the receipt of the injury and the access of inflammation. 2. After the access of the inflammatory symptoms. 3. When the violence of these symptoms has diminished. Against this division of periods no objection can be urged; they are distinct, successive, and easily appreciable, and we accordingly find that our author has adopted them, and proposes a classification of amputations under the three heads of primary, intermediary, and secondary, an arrangement which will facilitate our attainments of satisfactory conclusions on this much litigated point. We find the double flap and circular operations were indiscriminately practised.

The reader will find in the book before us, a deeply interesting comparative view of the results of medical casualties in the Legion and in the Old Peninsular Army. An excellent plan for organising an hospital administration is also proposed. Upon the whole, we feel we can recommend this volume as being replete with facts of the highest interest to the military surgeon.

THE LANCET.

London, Saturday, May 26th, 1838.

AFTER having rapidly examined the sanatary state of the *Maritime Forces* of this country, and shown to what an extent sickness and mortality are controllable in ships, we directed attention to some points in which the present arrangements appear to admit of improvement. The efficiency of the medical establishment was untouched, and remains to be investigated.

The *Regulations and Instructions for the Medical Officers of Her Majesty's Fleet* issued in 1835, offer several improvements upon the regulations of 1825.

The Instructions are, on the whole, exceedingly judicious, so far as we can see, after a careful perusal. They secure to the sailor, medicines, regular attendance, and as many comforts in sickness as the circumstances of a man-of-war will allow. The patients are removed, when the Surgeon judges it necessary, into the *Sick-berth*, where there is an attendant with the pay of an able seaman. The *Sick-berth* is under the immediate direction of the Surgeon. When men can be conveniently cured on board, they are not to be sent to an Hospital, Hospital-ship, or Sick-quarters, unless the nature of their disease may render their retention on board dangerous to others, or injurious to themselves. A small proportion only of the cases, therefore, are sent ashore to the Naval Hospitals. The sum for the seamen, marines, and boys voted in the 14 years 1816-29 was £361,000: from which to obtain the numbers employed, 28,000 must be deducted, as the numbers voted yearly in the estimates exceed by about 2000 the actual numbers borne.*

	Years of Life.	Sick sent to Hospitals all over the World.	Deaths in Hospitals.
1816-29 ..	333,000	.. 50,916	.. 3510
Ann. Prop.	1000	153	10.5

* Select Dist., Sir G. Blane, v. 2, p. 17.

Hence it appears that 1000 men sent only 153 cases annually to Hospitals, although if all the climates in which ships are stationed be taken into account, the estimated annual number of cases in 1000 men must exceed 1000.

Dispensaries for the reception of medicines and medical stores are now fitted up in all classes of her MAJESTY'S ships, to the sloops inclusive. The Navy, we understand, is indebted for this improvement to the zeal of the Physician-General of the Navy. Medicine-chests are supplied to furnish the Dispensary in proportion to the numbers of men: and the quantities of each medicine in the chest are regulated by a Tabular Scale. (No. 1, Appendix to Instructions.) Thus a chest to serve 300 men, a year, contains 3½ lbs. of powdered Peruvian bark; 1½ lb. of calomel; 48 lbs. of sulphate of magnesia; 6 lbs. of strong mercurial ointment; 3½ lbs. of comp. sulphur ointment; ½ lb. of ipecacuanha; ¼ lb of tartarised antimony. The medicines are surveyed annually: and a schedule is made out of the proportions of each article remaining, and required to complete the proportion of the established scale. And when any articles are spoiled they are, before being condemned, surveyed by three surgeons, who make out a list of the several articles, their quantities, the probable cause of their becoming unserviceable, and the manner in which they are disposed of. This report is made out in triplicate, and a copy is delivered to the Captain for the Commander-in-Chief. Medicines can be purchased by the Surgeon on Foreign Stations. The supply of medicines from regular establishments is accompanied by Invoices, with which the Surgeon has to compare the several *quantities*, to see that they are correct. Drugs for the Navy have been procured by contract from respectable chemists, and examined by the authorities, but are proper *chemical tests* employed to ascertain the *qualities* of the principal articles? In the present nefarious state of the Drug Market this precaution is indispensable. A skilful analytical che-

mist should be employed for the purpose; as it would be absurd to expect Naval Surgeons to detect every adulteration by mere nasal and ocular investigation, or to go to the trouble of analysing all the substances in the medicine chests.

Naval surgeons supplied the medicines themselves down to 1796; a certain number procured genuine remedies; but the pay was low, the mortality high, the complaints loud, and there is too much reason to believe that British Seamen then obtained no better, or more efficient remedies, than the Paupers now obtain under the Poor-Law Amendment Act, and its peculiar feature, the tender system. Since 1804 the whole of the medicines have been supplied by Government; but Surgeons, and Assistant-Surgeons are still required to furnish Surgical Instruments. Instruments should be added to the other boon to place the whole on a satisfactory footing. The salaries are still low, and Parliament would scarcely begrudge the expense. In the subjoined Parliamentary "Return" the Instruments, it is presumed, are for the Hospitals.

The amount paid for Medicines and Surgical Supplies for the use of the Navy:—

	1832 £.	1833 £.	1834 £.
Medicines and Chemicals	3655	3846	3943
Surgical Instruments ...	292	402	503
Total	3947	4248	4446

From Jan. 1st, 1834, the return states that the *Galenicals*, *&c.*, have been supplied by the Apothecaries' Company; *Chemicals* by Howard and Co.

The Sick are supplied with the comforts, and delicacies which they require, and convalescents with the nutritious dietary, cited a few weeks ago by a correspondent, without any increase of the average expenditure. The Surgeon of a 1st Rate Ship has £16 placed at his disposal from a fund, called the "Sick-Berth Fund," kept up afterwards by the stoppage, when a man falls ill, of the regular allowance of provisions. As many of the sick are on *low diet*, the savings from this source supply the convalescent with Full Diet, and even wine, when it is required medicinally. This ingenious and equitable arrangement has only been recently adopted.

The Instructions *for the Royal Naval Hospitals* at Haslar and Plymouth are exceedingly minute. Other Institutions may borrow several practices from them with advantage. The following is a good regulation, that should be adopted in all Hospitals. "In order that the patients may know every "allowance to which they are entitled, you "(the agent and steward) are to cause a "printed scheme of diet to be constantly "hung in some conspicuous place in each "ward. And *any number of Patients, not "exceeding six, are to be permitted to attend "the weighing and cutting up of the meat, &c.*" The aversion which the officers of some Hospitals have expressed relative to publicity is not countenanced by the practice of the Navy. A signal is directed, by a standing regulation at the Naval Hospitals, to be made whenever an operation is about to be performed, and the Surgeons of Ships in port are expected to attend, with as many of their assistants as can be spared.

The Surgeon is instructed to transmit regularly to the Physician-General of the Navy *a Nosological Return* of the state of the Sick, completed to the end of every month when on the Home station, and to the end of every three months when abroad. In the Form of this return "CULLEN'S Nosology" is followed; and against *Febres*, and other diseases, are stated the numbers remaining by last return; the numbers since added to the list, Discharged to duty, sent to Hospital, Died, Invalids, On the list when the return is made, Confined to Bed, Convalescent, Objects for Survey. Besides this a rough and a fair Medical Journal are kept in a prescribed Form, the fair copy being transmitted, at the end of every year, to the Physician-General of the Navy. A great deal of information has been accumulating in these returns, of which the public have been too long left in ignorance. It has been generally known that

the Medical Records of the Army are open to the profession at large: and Mr. MARSHALL, Captain TULLOCH, and Mr. EDMONDS have published a great many highly interesting facts derived from these sources; while, as we have seen, no public document of any statistical value has ever emanated from the Medical Department of the Navy; the partial, garbled returns procured by Sir GILBERT BLANE, having been only calculated to mislead, and to exaggerate the health of seamen. The researches of the Naval Surgeons have been hidden under a bushel: and to this we ascribe, in no small degree, their present degraded position, compared with the state of the Army Surgeons, whose useful labours the public have been better able to appreciate. What have the 1000 Navy Surgeons, paid £130,000 a year of the public money, done? demand the economists. Have they raised the Health of the Navy to the highest attainable pitch? We answer yes, but they have not established the fact, by accurate observations rigorously recorded. Have they contributed to the progress of the science which they cultivate? We answer yes, again, but they have never laid the evidence before Parliament, or before the public. It is with unfeigned pleasure, then, we have lately heard that a complete digest of the observations in the Nosological Returns is preparing for publication, which will leave the world no longer in the dark respecting the services that the medical department of the Navy has rendered science and society. A similar report is preparing by the Army Board; so that a fair opportunity will be afforded of estimating the industry and talents of the two services; and if the Physician-General of the Navy can (as we anticipate) produce a report as accurate, comprehensive, and interesting in its results as the Director-General, we can scarcely conceive that Government will refuse that justice to the Navy which has been so long conceded to the Army.

At some periods of our history it has been deemed prudent to shed around every department of the Public Service a sort of official mystery, which sanctified abuses, and answered almost every purpose, except that for which the mystery was professedly upheld, and vaunted. It was pretended that secresy secured success and efficiency. Secresy, on the contrary, gave rise to the corruption which spread through the Navy like a leprosy: under the veil of secresy millions of the public money were squandered, the stores were adulterated, ships were destroyed, expeditions were defeated, and thousands of brave men were sacrificed. Publicity averted and will avert these evils for ever. Publicity, like ventilation, purifies and gives vitality to Public Offices: in the dark, the walls throw out unhealthy damps, and lurid fungi, and acquire the fatal powers ascribed by HOMER to the Circean poison, metamorphosing those who enter into all unclean animals, bats and reptiles—

Canis immundus, vel amica luto sus,

ravening wolves, and lions, all tamed, and fit only to assemble in anti-chambers, flattering the ascendant lord, like dogs, come from dinner, wagging their tails around their master. Publicity disenchants the walls; the light breaks the spell, and not only prevents office from exercising any deleterious effect on honest minds, but transmutes men already degenerated into useful public servants.

———Setæque cadunt, bifidosque relinquit
Rima pedes. Redeunt humeri: subjecta lacertis
Brachia sunt.

On these grounds, and on many others, it appears highly desirable, that an annual report of the state of the Navy and Army should be laid before Parliament. The part of the Report drawn up under the direction of the Physician-General would include all the details that the sagacity and practical ability of that officer might suggest, as likely to lead to useful results. It would include the average strength of the Navy; the numbers living, sick, dying, in every quinquennial division of age, and every year of service; the strength, the sickness, and the deaths in each season, in every ship,

and in every climate; the respective number of cases of each particular disease, their duration, and termination: the number of cases terminating in death, or recovery, between the 0—5th day, the 5th—10th days, &c.; and the effects of the different modes of treatment employed, in diminishing the mortality and duration of cases. It might, also, comprehend a great variety of other facts for the solution of the most important problems in Medical Science. The statistics of the Naval Hospitals and Marine Infirmaries should be thrown into a proper form, and the expenditure should be placed in juxta-position with the average daily number of patients. At present the salaries, wages, cost of provisions, and miscellaneous items are scattered all over the Government Estimate.

The Physician-General's Naval Report should, as was before suggested, include several particulars respecting seamen in the Merchant's Service, in order to avert the present reckless sacrifice of life in the Commercial Marine. This would increase the labour of drawing up the report; but we do not think that this officer could complain, if he had proper assistance, and if his salary were placed on the same footing as the salary of the Director-General of the Army Medical Board.

SUICIDE BY A POOR-LAW UNION SURGEON.

Mr. W. L. Caswell, surgeon of Huntspill, committed suicide on Friday last, by dividing his carotid artery with a razor. A report of the inquest has been forwarded to us, from which it appears that the deceased laboured under temporary insanity at the moment of committing the act of self-destruction.

We are sorry to add that a rumour has gone abroad, that the conduct of the Bridgewater Board of Guardians towards the deceased was the main, if not the sole cause of producing the state of mind under which Mr. Caswell laboured for several hours previously to his death. How far such report may be true we cannot presume to say without additional evidence; in the mean time we extract the following remarks from the "Dorset Chronicle" of the 17th May.

"The deceased was one of the medical gentlemen, whose cases we have alluded to in some recent numbers, who were refused payment by the Board of Guardians of the Bridgwater Union of their bills for attendance on the poor, and it was his bill which was left for decision to a committee of the board as stated by us a fortnight since. Our informant, who was with the deceased the evening preceding his death, assures us that the unfortunate gentleman appeared highly excited at the manner in which he considered himself to have been treated by the board, entering with much warmth into a detail of the whole proceedings. Deceased said that his bill for medical attendance on the paupers in his district during the period that he attended them as private patients, amounted to 90*l.*; that the number of sick at that time exceeded 40, besides several cases of fracture, and that his charges did not amount to the sum which many respectable practitioners would have charged for similar services; that his orders for attendance, &c., had been examined by a committee of the board, to whom his case was left, and that one of that committee had offered him 50*l.* in lieu of the whole amount. This offer he indignantly refused, when he was told he might go to law and the board was determined to resist his claim by every means in their power. He was ultimately awarded 40*l.* only, and our informant says that the manner in which he spoke of the treatment, and the anxiety he expressed to know what the world would think of his accepting so small a sum instead of his whole bill, seemed to pourtray much inward apprehension that an opinion prejudicial to his standing in the profession would be entertained of him. The deceased remarked that the board was aware of his straitened circumstances which would not allow him further to prosecute his claim, and that had led them so to oppress him. We deem it due to the deceased to add that the clergymen of the various parishes in his district all bear testimony to his very humane and kind treatment of the paupers, and that not only were his highly-gifted professional talents exerted in their behalf but his private bounty, even when himself in narrow circumstances, often tended to lighten their distresses. He was a remarkably fine grown man about 34 years of age, and has left a widow and three children."

Ulcers.—Ulceration of the small intestine is a lesion peculiar to two diseases, one chronic, viz. pulmonary consumption; the other acute, viz. typhus fever. The same remark applies to ulceration of the œsophagus.—*Louis.*

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, May 8th, 1838.

Dr. BRIGHT, President.

ON THE PULSE.

By JAMES HOPE, M.D., F.R.S., Assistant Physician to St. George's Hospital.

THE object of the author was to show that the pulse, although held by numerous authors, ancient and modern, to several of whom he referred, to be a most fallacious symptom, is, notwithstanding, a sign of considerable value and diagnostic precision, more especially as throwing light on the nature of organic diseases of the heart. To the ignorance of most former writers on the subject of the action of the heart, Dr. Hope referred their doubts regarding, or their denials of the utility of attention to the modifications of the pulse in diagnosis. After some prefatory observations, in which the author pointed out what he considered defective in the views of some of the more eminent recent pathological writers in France and England, the author proceeded to prove:—First. That the several more important organic diseases of the heart produce corresponding pulses. Second. To show that cardiac disease is capable of simulating all the varieties of pulse presented by other diseases in general, and that, consequently, in judging of other diseases allowance must be made for any co-existing disease of the heart. To prove the former position, the author stated, that by means of various discoveries he had made relative to the action of the valves of the heart, and the consequences of organic change in those parts in disease, and of artificial suspension of the valvular play in physiological experiments, he was enabled to connect certain characters of pulse with particular valvular defects. His discovery of mitral regurgitation in 1835, and of the murmur indicating that disease, enabled him to ascertain that the *corresponding pulse was, when the regurgitation was considerable, eminently weak, small, intermittent, irregular, and unequal;* also that in irritation of the mitral valve the *pulse is small, feeble, and irregular*, an observation made by the author in 1824, and thus confirmed. The existence of aortic regurgitation, rendered probable by the facts just stated, was substantiated by the author in 1831, and in various physiological experiments in 1833-4 and 5 was further elucidated, and by those investigations the author ascertained that the pulse indicating aortic regurgitations is a pre-eminently jerking pulse, such as occurs after hæmorrhage, in anemia, &c. The influence of semi-lunar valvular disease on the pulse was farther elucidated by the author's discoveries as to the cause of the second sound of the heart, namely, that it depended on tension after sudden closure of those valves during the diastole; and by means of the new views arising out of these discoveries the author was enabled to devise a method of distinguishing the particular valve affected in organic diseases. He found that the diagnosis depended on examining at different points of the thorax, namely, over the pulmonary arteries and on the left, and to the right and over the aorta, in each case about two inches from the valves, when examining the semi-lunar valves, but that the interior or auricular valves should be examined near to the apex of the heart, to the right or left a little, according to the side of the heart to which the valves to be examined should belong. The author farther referred to his discoveries respecting the pitch or key of the murmurs accompanying the valvular action; these he found to vary principally with the depth of the source from which the sound proceeded. Murmurs attending the play of the pulmonary valves are more or less hissing or whizzing, and murmurs in the ascending aorta have the same character; murmurs seated in the aortic orifice resemble the letter R in a whisper; murmurs from regurgitation are lower toned and more open; those of the mitral orifice are hollow toned, more so than those of the tricuspid, because more deeply seated. By attention to the marks and rules pointed out by him, Dr. Hope conceives that it will be comparatively easy for observers to satisfy themselves of the position, that the more important diseases of the heart produce corresponding pulses.

The author then entered upon the second part of his paper, and after enumerating sixteen leading varieties of the pulse, proceeded to explain the characters belonging to each, showing that though all producible by certain constitutional causes, which he points out under each head, they are each occasioned likewise by morbid affections of the heart. He then proceeds to show in detail how the following varieties of pulse may be explained as effects of cardiac disease:—1, large or full pulse; 2, small pulse; 3, strong pulse; 4, weak pulse; 5, hard pulse; 6, soft pulse; 7, prolonged pulse; 8, quick or jerking pulse; 9, slow or infrequent pulse; 10, frequent jerking pulse; 11, intermitting pulse; 12, non-intermitting pulse; 13, irregular pulse; 14, regular pulse; 15, unequal pulse; 16, equal pulse, and some subordinate varieties, such as the bounding, the wiry, &c. &c.

The author then concludes his paper with some observations on the importance of being able to distinguish between abnormal pulses depending on constitutional causes and those that depend on cardiac causes alone.

Dr. JOHNSON said, Dr. Hope's paper showed the utility of the division of labour,

for unless a great number of years had been devoted to the subject of which it treated, it would have been impossible to have arrived at such perfection. He wished, however, to make one or two observations on statements contained in that paper. He understood Dr. Hope to say, that in three or four hours he could teach a pupil to understand and appreciate the various states of the pulse, as indications of disease. Now, he (Dr. J.) had for twenty, he might say nearly forty, years studied the state of the pulse, in connection with disease of the heart and other organs, and he now, more firmly than ever, believed in the ancient aphorism, that it was "*res fallacisima.*" Dr. Hope had founded his observations on the pulse, chiefly, from the information he had obtained from auscultatory examinations of the heart's action. Why, therefore, should so much importance be attached to the state of the pulse, when it was as easy to go at once to the cause of the effect and examine the heart itself? Besides, who would attach much importance to the state of the pulse, in any disease, unless he had also inquired into all the symptoms of the affection? Who would treat pleuritis, simply, according to the state of the pulse? Looking at the extent of labour which all these inquiries involved, he should say, that instead of three or four hours, it would take four hundred years to ascertain the different states of the pulse, as indicative of particular diseases. The plan which Dr. Hope had laid down could never be brought into general practice.

Dr. BURNE considered the pulse might be made a most valuable means of assisting diagnosis if properly studied. He had, for many years, studied the pulse with this view in that careful manner which a young physician only has time to do. The great difficulty regarding the pulse, as Hunter had said, consisted in its having but one definite character, and that was its frequency; the other characters and variations of the pulse were not easily described, for if three or four persons felt the same pulse they would probably all give different descriptions of it, in every respect, except as regarded its frequency. He had published a paper some years since on the pulse, in which he had detailed every variety of it as laid down in the paper before the Society; he had also referred the various kinds of pulses to distinct causes, though in a more general manner than had been done by Dr. Hope. The state of the pulse depended on three causes, the impulsion of the heart; the volume of the blood; and the character and degree of the tonicity of the arteries; and these must be all taken into account in studying the pulse in connection with disease. Dr. Hope, in his paper, had stated that the return of blood from the aorta to the ventricle was diagnosticated by a peculiar state of the pulse, which he had had many opportunities of demonstrating. He, Dr. Burne, had only seen three cases in which such a reflux of the blood had occurred.

MEDICAL SOCIETY OF LONDON.

Monday, May 14th, 1838.

Mr. BRYANT, President.

ALVINE AND BILIARY CONCRETIONS—REMARKABLE CASES OF OBSTRUCTED BOWELS.

Mr. HUTCHINSON related the following case to show the difficulty of diagnosis in some cases in which there is an obstruction in the bowels. He had attended a lady last October who had previously been in excellent health. On being called to see her he found her with all the symptoms of severe inflammation of the bowels, with great pain in the right iliac fossa. Bleeding, leeches, and the use of calomel and of opium, to the production of ptyalism, afforded not the slightest relief; on the second day, as there was no evacuation, and stercoraceous vomiting came on, he suspected the presence of intussusception, and employed enemata without benefit; on the fourth day a large calculus passed, and the patient soon recovered. This calculus was exhibited to the Society; it was pyriform, about as large as a walnut and a half, and appeared to consist of adipocere in a crystallised state. Mr. Hutchinson had analysed it, and found it to consist chiefly of cholosterine. Now, did this calculus form in the gall-bladder or in the cœcum? He (Mr. H.) was inclined to believe that it formed in the latter situation, from the presence of pain there, and the absence of all pain and other symptoms, which he thought must attend on its formation in, and passage from, the gall-bladder.

Dr. WHITING had lately seen a case resembling that just detailed. In this instance all the symptoms of inflammation of the peritoneum, with obstructed bowels, were present, and the patient had stercoraceous vomiting. Venesection, leeches, and calomel and opium had been employed. He (Dr. W.) first saw the patient, to whom he was called by another practitioner, late one evening, and expected the following morning to find the patient worse, but on calling found he had passed a copious stool, which contained a large calculus, apparently consisting of crystallised adipocere. He (Dr. W.) thought that a concretion of this sort would not be formed in, and pass from, the gall-bladder through the ducts; if it had passed from the gall-bladder it must have been by ulceration near the fundus of that organ into the neighbouring intestine; but, granting that this did take place, there would have been a very great disturbance of the genaral system, which was not found in either of the cases detailed. He was more inclined

to the opinion of Mr. Hutchinson, that the concretion took place in the intestines; but this was doubtful, for it was not of the same character as intestinal concretions generally are. Regarding the symptoms which resembled those arising from intussusception, there were so many sources of obstruction in the bowels, that it was frequently impossible to say, before death, what was the exact cause. He had seen a case lately in which there were all the symptoms of peritonitis, with obstinate constipation. Antiphlogistic remedies were employed without benefit; stercoraceous vomiting came on, the patient fell into a state of collapse, and soon after sunk. On examination there was found a band encircling the colon and very much diminishing its calibre; inflammation of the mucous membrane, and of the peritoneal covering of the intestine, had come on, and formed a complete obstruction. Now, no one would have been able to diagnosticate the cause of this obstruction; intussusception and other causes would have produced the same effects.

Mr. PILCHER said, in regard to the impossibility of the calculus, in Mr. Hutchinson's case, being formed in the gall-bladder, and passing from thence into the intestine, that every one must have seen large calculi in the gall-bladder after death. He (Mr. P.) had seen a stone in the ductus communis certainly one-third as large as that exhibited to the Society. The ductus communis was as large as the female urethra, and, perhaps, as dilatable; we know that calculi, as large as the one in question, were discharged merely by the efforts of the urethra itself. Why should not this be the case also with the ductus communis? He thought it not at all impossible that the calculus, in Mr. Hutchinson's case, could have passed from the common duct into the duodenum; it would be much more difficult, however, for it to pass from the gall-bladder to the ductus communis. He thought we were not sufficently aware of the dilatable power of parts; every one must have seen the rectum as largely dilated, in comparison with its calibre, as it would have required the gall-duct to be enlarged for the passage of this calculus. He could not understand that the concretion in question could have been formed anywhere else than in the gall-bladder, formed as it was of one of the chief constituents of the bile, which, when it enters the bowels, undergoes so many changes. Regarding the diagnosis between the obstruction arising from intussusception and the presence of a band round the intestine, the first occurred slowly, the second generally coming on suddenly. In two cases which he had seen, the obstruction took place during efforts made to pass evacuations while the patients were on the close stool.

Dr. BENNETT thought the shape and composition of the calculus before the Society, were strong arguments in favour of the views advanced by the last speaker. There was a class of cases of obstructed intestine which had not yet been alluded to. He had been called to see a young gentleman, who two or three years before had been kicked by a horse, in the right iliac fossa; peritonitis supervened, but he recovered; two or three attacks of the disease took place afterwards, attended by obstinate constipation. When called to him in the present attack, Dr. B. found him suffering from great pain in the seat of the original injury, attended with constipation; a tumour was detected, by percussion, in the seat of the pain. He was led to surmise from the history of the case, and the inflammation being only topical, that some derangement in the position of the bowel had taken place, and that a collection of fœcal matter had formed in the part. Enemata, leeches, and fomentations were employed; as soon as the bowels were well moved he quickly recovered.

Mr. PILCHER thought that if the calculus in the case related by Mr. Hutchinson had formed in the cœcum, the symptoms would not have set in so suddenly as they did, but there would have been more signs of its presence in that organ during its formation. Granting that the concretion formed in the gall-bladder, it might have passed through the small intestines without much inconvenience, but arriving at the ilieo-colic valve its course was obstructed, and it gave rise to the symptoms which were present. He thought this a presumption that the concretion formed in the gall-bladder.

Mr. LEESE, twenty years since, had exhibited to the Society a calculus as large as the one in question, and very much the same in appearance; it was passed by stool from an old lady 80 years of age, and who, when he was sent for to see her, said, she was not very ill, but she had touches of colic, with vomiting, and some uneasiness in the bowels. The question before the Society in this case was, as to how and where this calculus formed, and it seemed to be the general opinion, that it formed somewhere about the head of the cœcum. In the case of an old man who perished from the passing of biliary calculi, one as large as a marble was found impacted in the gall-duct, a smaller calculus was following.

Mr. DENDY said the concretion was so different to those usually formed in the intestines, that he felt its composition a strong objection to the opinion of Mr. Hutchinson regarding the seat of its formation. He saw, on the other hand, the great difficulty of such a sized stone passing from the gall-bladder into the intestines. Cases were recorded in which, after death, the gall-bladder was found full of calculi, the

presence of which had not been indicated during life; perhaps, however, the presence of these bodies in the ducts might have produced very different results. Might not the concretion in this case have formed in the gall-bladder, and passed through the ducts, while of a pasty kind of consistence, and crystallised afterwards? Regarding the accommodation afforded to the passage of foreign bodies through the intestines, when time was afforded for such accommodation, he had some time since related to the Society a case in which an egg-cup which had been at least seven weeks in the intestines had passed by stool; in this instance all the symptoms of strangulated hernia were present.

Mr. CRISP said, that concretions which formed in the intestines of horses had equilateral deposits round a central nucleus, he therefore thought the same might occur in concretions formed in the human intestines. He thought it impossible that in the case under discussion the concretion could have passed through the gall-duct.

Mr. SAUNDERS exhibited to the Society some very ingenious artificial legs, affording greater facilities of motion to the wearer than any we have ever had the opportunity of inspecting.

UNIVERSITY COLLEGE HOSPITAL.

COMPLICATED HYSTERIA, WITH PARAPLEGIA, COMPLETELY CURED BY CARBONATE OF IRON, COLD BATHS, AND MESMERISM.

HANNAH HUNTER, a delicate-looking little girl, was admitted January 1, 1838. She has been subject for many years to various disorders of the nervous system; she first remembers having had pains in the left ear, which commenced when she was five years of age, and continued to return at intervals until four years ago; at the same time she became subject to attacks of asthma, for which, three years ago, she took two emetics, the first afforded her much relief, but the second was followed by great irritation and sickness, which lasted for five hours, and on the following day she was seized with paralysis of the lower extremities, which has, more or less, continued ever since, and was attended with the disappearance of the asthma. She has slight lateral curvature of the spine, which was first noticed three years ago; she has, for many years, had frequent darting pain in the precordial region, and has been, more or less, subject to chorea. About six months ago she became subject to fits of convulsions, rigidity, with insensibility; the fits continued for three months, but on her coming to town they ceased, and within the last four months she has again had spasmodic attacks of difficulty of breathing. Her parents are living, and enjoy good health. She is a native of Dover, and has always lived at the sea side.

She has been subjected to the following treatment:—On the appearance of the paralysis she had leeches applied to her chest, and two issues made in the course of the spine; she had also warm baths, and was salivated; at the end of four months she got better, and was able to leave her bed, though she still suffered from weakness of the spine, and soon afterwards had a relapse.

Present Symptoms.—She has now complete paralysis of the lower extremities; she cannot stand, and can only just move her legs in bed; her head feels heavy and painful, more especially on the left side, and her sight, she says, is often dim; she has darting pains on the left side, increased on slight pressure, accompanied with tenderness on the left side of the spine, about the middle of the dorsal vertebræ; she has frequent attacks of dyspnœa, unaccompanied by cough or expectoration; she is subject to frequent palpitations; there is a slight lateral curvature of the spine, the convexity being directed to the right side; tongue clean, appetite not very good; bowels open; pulse 120, soft, and small; she has never menstruated.

Jan. 2. To have a bath at 90°, and electrical sparks daily to the loins and thighs; two drachms of the carbonate of iron three times a day.

6. The bath to be lowered to 85°; the iron to be increased to half-ounce doses.

9. The bath to be lowered to 80°.

16. Much improved in every respect.

20. To-day she was mesmerised, and considerable drowsiness was produced by the operation. On repeating the proceeding on the following day, genuine, mesmetic sleep was induced.

27. Has been mesmerised daily since the last report, and she is now in every respect improved; the sensibility and power of motion in the limbs are much increased, and she walks about with a little assistance. All the remedies but Mesmerism were omitted to-day.

April 18. Since the last report Mesmerism has been daily employed, and she has gradually and steadily gained health and strength. We subjoin particulars of some of the phenomena which result from the Mesmeric operations.

On the 1st of February Mr. Wood, during the operation, ascertained that the transverse movements with the thumbs would not succeed in waking her if made on any other parts of the head or face than the eyebrows, not even if they were made on the forehead; it also appeared necessary that the movements should be made at the same time, for if one eyebrow was first rubbed, and the other immediately afterwards, no effect whatever was produced; if the thumb and forefinger were employed over

the eyebrows at the same time no effect ensued.

3. It was found that after the hand had been extended towards her head for a minute and a half she became insensible, and continued in the same position with her eyes wide open; on gently pushing her head backwards, however, her eyes closed, and in a short time she was asleep. During sleep she is, as far as can be ascertained, perfectly insensible, and the jaw is firmly closed. She says that, just before the sleep comes on, she feels as if somebody gave her a blow on the top of her head, and from that moment consciousness is lost. The longest time that the sleep has hitherto continued is three hours.

5. Various means, and with different substances, were employed to-day for the purpose of awaking her, but nothing but the two thumbs, or corresponding fingers, was effectual.

6. To-day sleep was induced by Mr. Wood merely fixing his attention on her for the space of four minutes, without the hand being even extended. She was awoke by another person.

8. It was attempted to recover her from the sleep which had been induced by different movements, by taking hold of her own thumbs and fingers, and rubbing her eyebrows; by using a thumb of one person and a thumb of another, and by the thumb and forefinger of the same hand, but without success. The sleep was induced again in six minutes by standing at the distance of six or eight feet, without extending the hand. Dr. Elliotson now proposed to ascertain how many of the transverse movements were required to awake her. A movement with the two thumbs was made, no effect followed; at the end of a minute a second movement was made, this was followed by a sigh, but the sleep continued; in another minute a third movement was made, and she instantly awoke.

9. Endeavours were now made to wake her by three transverse movements, made at intervals of two minutes, but only a gentle sigh was produced; at the expiration of two minutes more a fourth transverse movement was made, the sleep continued, but a deeper sigh than the last followed; a fifth movement, at an interval of two more minutes, was made, and she instantly awoke. The sleep was again induced by placing the fingers on her forehead for three minutes; three transverse movements, at intervals of one minute, were made, and she awoke.

10. The sleep was induced as usual. Mr. Faraday, who was present, suggested that she should be bled, and the blood stopped by the actual cautery. This proposition produced not the slightest effect upon her countenance or pulse. Mr. Faraday tried several other means to satisfy himself of the reality of the insensibility She was awoke as usual.

23. To-day it was endeavoured to produce the sleep, while she was kept constantly excited by talking and laughing. After a considerable time she felt drowsy, but the excitement prevented the occurrence of sleep. She was now allowed to be quiet, and the process was continued; but still no sleep followed; she, however, became insensible, and remained sitting with her eyes wide open. After some time the eyes were closed, but opened again when she was spoken to, this being the only sign she evinced of consciousness. She could not be roused from this state by the usual means, but after a time recovered spontaneously.

26. The sleep was produced in about twelve minutes, by standing and looking at her from a distance of ten or twelve feet. She was recovered as usual.

March 1. The sleep was produced by extending the hand towards the back of her head, without her knowledge, in a few seconds. It was now observed for the first time, that her head followed the motions of the hand when it moved from side to side, and on raising it above her head she attempted to stand, but did not appear to have sufficient strength; this latter effect was only produced while her eyes were open, and the movements were made in her face.

2. The sleep was produced, and allowed to continue all night; she was awoke as usual in the morning; the *mesmetic sleep* having continued twelve hours. The same sleep was induced and allowed to continue, for three or four nights in succession.

12. She was placed in a private ward; Mr. Wood bandaged her eyes and padded each side of her nose, this occupied some minutes; she continued sitting still, but it was not ascertained, before leaving her, whether she had already become insensible. Mr. Wood left the ward without noise; on returning in half an hour she was found sitting in the same position, and on removing the bandage she was found insensible. As it has often happened that the sleep has been produced in a few seconds it is not improbable that she was asleep before Mr. Wood left the room. The same experiment was afterwards repeated by Mr. M'Kenzie, she was then left for a quarter of an hour and continued awake; he then went into the room without her knowledge, and extended his hand for half a minute, when she became insensible.

On several subsequent occasions the phenomena of traction, as already described, were endeavoured to be produced, sometimes with success, sometimes without. It never succeeded to any remarkable extent in this case.

In lecturing on this case, Dr. Elliotson

observed, that there was an undoubted improvement in the patient while under the remedies which were employed previous to the use of Mesmerism. The steady and gradual improvement which took place after this plan of treatment was alone pursued, however, was sufficient evidence of its remedial effect in this case.

May 17. To-day, after lecture, Dr. Elliotson read some portions of letters, which had been sent by Hannah Hunter and her mother to a patient, and a nurse in the hospital. Hannah is in excellent health, and states that she has attracted great attention in her native town (Dover), the remarkable influences of Mesmerism upon her having been demonstrated before almost, if not all the medical men in that town.

STONE IN THE BLADDER.—OPERATION.

W. G., aged 73, was admitted April 19, under the care of Mr. Liston, having suffered from all the symptoms of calculus in the bladder during the last two years, and which have been gradually increasing in severity. On admission he was sounded by Mr. Liston, and two small stones of hard consistence were discovered in the bladder. The patient was very anxious to have the operation at once performed, but as he had travelled a long distance, and was in an irritable state, the operation was deferred until the 28th, on which day Mr. Liston performed the lateral operation. Some slight difficulty was experienced in the proceeding, in consequence of the unusual depth of the perineum, and the size and indurated state of the prostate; the operation, however, was speedily accomplished, two stones were removed, the loss of blood was inconsiderable. An elastic tube was passed into the bladder through the wound, and there retained.

It is unnecessary to detail the further progress of the case; he improved gradually from the date of the operation, and returned to the country on the 20th of May, full of gratitude.

LONDON HOSPITAL.

INJURIES FROM A FALL.

Robert Edwards, ætat. 17, a sailor, admitted, March 23rd, into Bowley's ward, under the care of Mr. Luke. Fell from the maintop upon deck; he was taken up senseless and brought to the hospital, when upon examination he was found to have fractured his nose, the lower jaw at its symphysis, and there was also a comminuted compound fracture of the thigh in its middle third. From the dilation of the pupil, stertorous breathing, and from a small portion of blood escaping from his ear it was supposed that a fracture of the base of the skull had occurred, but which opinion the subsequent symptoms did not appear to bear out. There was also a slight degree of delirium. He was ordered twenty-five minims of the tincture of opium, to be taken immediately, and the saline mixture, with ammonia, every four hours, and twelve leeches to the temples (query). After the application of the leeches great prostration of strength ensued, and the character of the delirium was altered to that of tremens. Another dose of the tincture of opium ordered, which appeared to give considerable relief. Take of calomel and jalap one scruple.

Splints were applied to the fractured thigh, previously to which several large pieces of the comminuted bone were removed; the external wound is very large. A slight bandage was applied round the head, bringing it under the jaw, but the fracture being directly through the symphysis, the antagonist muscles, it was supposed, would keep the two fractured ends in apposition.

24. The breathing is not quite so laborious as it was yesterday, and the pupil appears to be gaining, in a slight degree, its contractility. The calomel and jalap not having acted, he was ordered a dose of senna and salts.

April 3. The symptoms apparently indicating a fracture at the base of the skull are gradually disappearing; the breathing is less laborious, and more regular; the matter from the external opening in the thigh escapes in great quantities, but is of a healthy character. A full diet, with porter and wine, ordered, but from the fracture of the jaw the patient is prevented from masticating any solid food. To prevent the displacement of the two fractured ends of the jaw consequent on the action of the tongue, Mr. Luke recommended the model of a jaw of a reduced size to be placed inside the mouth, to guard against this displacement.

14. The quantity of pus which continues to escape from the opening in the thigh is very large, and from the impossibility of any solid food being taken into the stomach, owing to the fractured jaw, the system is not supported by that generous diet which it would otherwise be. An increased quantity of porter and beef-tea ordered.

20. The very excessive discharge from the thigh, and the impossibility of his taking any solid sustenance to support the powers of the system, has so debilitated him that there is much fear that he will not be able to stand against the great exhaustion consequent thereon; the pulse is rapid and rather feeble, and at intervals low delirium exists. Mr. Luke, as a dernier resort, proposed amputation, but the friends would not consent to the operation. Every possible means of supporting the system have been resorted to.

28. He has been gradually sinking; in the night delirium came on, and he expired early this morning.

PLICA POLONICA.

There is a very strikingly marked case of this disease in Bowley's ward, in a German Jew, admitted under the care of Mr. Luke, with fractured ribs. The plaited hair extends in two broad bands from the crown of the head to the length of between two and three feet on each side, studded with pediculi. The old man appears to entertain a perfect veneration for these ornamental adjuncts to his cranium, and upon being questioned by Mr. Luke as to his willingness to allow them to be shaved off, refused to permit it even for "five tousand pounds;" but, on a future day, a little persuasion altered his determination, and he was shorn of his exuberant locks. Perhaps the knowledge that a smaller one was rapidly forming had some share in overcoming his scruples. They were immersed in spirit in order to destroy the pediculi, and now adorn the museum of the hospital, instead of forming a receptacle for the filth and vermin of the old German's head,

NEW MODE OF PUNISHMENT IN THE NAVY.

THE following communication has been forwarded to us for publication:—

"On the night of the 30th January, I was sent for by the first lieutenant, C. M. M. Wright, who ordered me to apply the stomach-pump to a seaman, whom he stated to be drunk. Having examined the man, and found him, though not sober, yet so slightly intoxicated as to answer rationally every question I put to him, as I can yet prove by the evidence of Mr. Steele, the junior assistant-surgeon, I repaired to the quarter-deck, and represented it to Lieutenant Wright as my own opinion and that of my brother-officer, that there was no occasion whatever to use the stomach-pump; he replied, that he wished for no opinion from me upon the subject,—that the application of the instrument was intended as a punishment, and that it only remained for me to obey the order I had received, and report its execution to him. I rejoined, that, as a medical officer, considering the operation he had directed me to perform as, at all times, a purely professional one, and in the present instance wholly unnecessary, I conscientiously believed it to be my duty to remonstrate against its employment. Upon which he told me, that, in future, I must not presume to offer an opinion as to its necessity or not; that he should immediately commit to writing all I had said, and intended to report me to the commander in the morning, for having hesitated to obey his order.

"I then descended to the main-deck, where, assisted by Mr. Steele, I applied the stomach-pump, and reported my having done so to Lieutenant Wright, after which I went below to my hammock; but had hardly been in it more than ten minutes, when I was again sent for to perform the same operation for another seaman, who, however, required it as little as the first.

"On the following morning, I reported the above circumstances to Commander Walker, who expressed his surprise at my conduct on the preceding night, with which, he said, Lieutenant Wright had already acquainted him, adding, that he felt bound to forward to the captain the first lieutenant's complaint of me for disrespect and disobedience.

"On the 2nd of February, three days subsequently, I was sent for on the quarter-deck, where I found the captain, commander, first lieutenant, and Lieut. Nowell, who was officer of the first watch on the night of the 30th of January. Sir Thomas Fellowes then informed me that I had been reported to him for insolence to, and disobedience of the orders of, Lieut. Wright. The first charge I denied *in toto*, nor did Lieut. W. bring forward any evidence to substantiate it. With regard to the second, I proved that I had not disobeyed his order, but only delayed its execution during the space of time occupied in remonstrating against what I considered its cruelty and illegality. In the course of the investigation the captain said he saw I was a litigious character, and that he would report me as such to Sir William Burnett, the Physician-General of the Navy; that I should never leave the ship again except when the surgeon remained on board; that he should keep a strict look-out upon me in future, and that I might depend upon it, that the first time he had it in his power, he would try the effect of a court martial upon me. He further added, that he knew not what I might be as a gentleman, but that he was well convinced that I had no feelings of an officer about me, or that I would have had more regard for the good of the ship than to have made a quibble on medical grounds against that which seemed such an effectual method of punishment.

"R. T. C. SCOTT,
"Senior Assistant-Surgeon.
"H.M.S. Vanguard, Malta Harbour,
"March 19, 1838."

*** We invite the serious attention of Sir William Burnett to the above statement. If the medical officers of the Navy are to become henceforward the "executioners" of the captain or lieutenant, the sooner such a fact is proclaimed the better. We regret that Mr. Scott did not possess sufficient firmness to refuse altogether the performance of the operation, and we feel convinced that he is as "much of an officer," as he is evidently "more of a gentleman" than the brutal captain by whom he was so unjustly reproached. —ED. L.

VACCINATION.

To the Editor of THE LANCET.

SIR:—I have hesitated long ere I reverted to the subject of vaccination, as it has occupied so much space in your columns. Any debates, however, which aim at a decision regarding its *real* efficacy, and an analysis of the causes of its failure, must be deemed of vital interest.

I ever feel so much anxiety for the elucidation of these points, that I may be led to express myself too strongly, perhaps, in the course of discussion. Such, I fear, may have seemed the case in a late report of the Medical Society, in which I censured, somewhat severely, hasty and careless inoculation as the frequent cause of spurious vesicle and roseolous inflammation. I then alluded to the occurrence of these severe cases in the practice of a most esteemed vaccinator, Dr. Walker, that I might impress the fact more on the attention of the members, than with the remotest intention of slighting the memory of a man of so great integrity and perseverance. It was indeed meant as an *entre nous* within the walls of the Society; as, however, it is published I have been anxious to add thus much.

The *vulvular* insertion of lymph is a point of high importance; absorption is far more certain, and I am convinced that with such practice not the most remote fear can be entertained of severe and fatal roseola, unless the system be intensely predisposed, or of the spurious vesicle, that irregular brown ulcer which resembles a strumous sore, and has brought so much odium on vaccination. The prevalence of modified variola has, I have observed, shaken the faith of many parents in the prophylaxis of vaccinia; but as the disorder declines it is manifest that it is much mitigated, and the diffidence is then speedily removed. The almost invariable absence of *secondary* fever cannot be too often impressed on our minds, it is a point of the greatest value, because *that* is the stage of danger.

I have now a case of small-pox in a young lady, who had been vaccinated fifteen years since, in which the *primary* symptoms, were very severe, and the disease was, over the face, confluent. This is the tenth day from the first appearance of papula, the pocks are nearly all desquamating, the tongue, which had rapidly become crusted with brown fur, *clean*, and there is no symptom of disorder, but debility. I study to be brief, and shall, therefore, merely allude to the vital error of drawing deductions from these cases of mere prophylactic failure, instead of adopting a numerical calculation, and viewing the question by a reference to the great diminution of death or disfigurement from small-pox, since the introduction of vaccination. I am, Sir, your obedient servant, WALTER C. DENDY.

Stamford-street.

HOUSE OF COMMONS.

Wednesday, May 23, 1838.

Mr. LUCAS wished to ask the hon. Member for Roscommon whether he would object to going into Committee on the Medical Charities Bill, *pro forma*, this evening, striking out, as had been proposed, the eleven clauses which are to be rejected, and inserting the others by which they are to be replaced, so that the Bill might be reprinted?

Mr. FRENCH said that the hon. Member was anticipating him, for he had intended to pursue the course now proposed.

Sir R. PEEL hoped that sufficient time would be given between the printing of the Bill and the consideration of it, in order to enable distant bodies, such as the Universities of Scotland, and other parties who were greatly interested in it, to state their opinions on the subject.

Mr. FRENCH said that if the right hon. Baronet, in reading the Bill, thought that any longer time was necessary to be allowed, he would not object to its being given.

Mr. LUCAS then asked whether the hon. Member would name a day for the discussion.

Sir R. PEEL thought that that had better be done when the Bill had been reprinted.

At a subsequent period of the evening, we are informed, by the official papers of the House,—

That the Report on the Bill was taken into further consideration.

That the Bill was then recommitted.

That it was then considered in Committee.

That it was then reported.

That it was then moved that the further consideration of the Report should take place on Wednesday, the 6th of June; and, finally, it was moved

That the Bill, as it was then amended, should be reprinted.

With the exception of the account above given of the brief conversation which took place in the House of Commons, not a word of the proceedings in Committee was recorded in the morning newspapers; but then everything was done "*pro forma*"!

Mark the history of this Bill.

First, it was introduced to the House, two sessions since, by a couple of independent Members. It was a bungling ill-di-

gested concern, and a slight intimation of opposition stopped its progress for *that* session. Still, as a *job* was to be executed by *somebody*, the Executive Government was teased into taking it in hand. Then it was brought forward in the last session of Parliament by the Noble Lord, the Secretary for Ireland. That his intentions were good we readily admit. He is a high-minded, able, honest, Minister, and, withal, is a man of business. The measure now assumed an important aspect, and we opened a battery upon some of its provisions in THE LANCET; but *it is not true*, as has been alleged at some public meeting held in Ireland, that we opposed the 13th clause of Lord MORPETH's Bill. With what design such a statement has been made, must be explained by our maligners. The opposition to the objectionable clauses of that Bill originated, we are proud to confess, in the columns of this Journal, and had we not called the attention of our medical brethren in Ireland to the curious benefits which were in store for them, the measure, long ere this, would have adorned, or disgraced, the pages of our statute-books. In the present Session the Bill has been committed and recommitted, considered, and reported, *pro forma*, times out of number, and *now* it is to be printed *this* session, for *the third time*. Does any man believe *that the* PUBLIC INTERESTS *demand and obtain the exhibition of all this zeal?* Mr. FRENCH, we tell you again, that you have in Ireland some bad advisers, and again we say to you, "Beware of JOBBERS."

By the way, we are informed, that we have been attacked by some of the *peculators*, in a circular which has been addressed from Ireland to some of the Irish Members. It was not polite in the writers to withhold from us a copy of their communication The attack, however, of the gentry in question, furnishes a sufficient proof of the justice of the grounds on which we have opposed the Bill.

INSTITUTE OF FRANCE.

ON THE FOREIGN BODIES WHICH SERVE AS NUCLEI FOR URINARY CALCULI.

By M. CIVIALE.

AT a late meeting of the Academy of Sciences M. Civiale made some observations on certain modes of formation of calculi, an abstract of which cannot fail to be interesting.

An account of the nuclei which occasionally serve for the formation of urinary calculi is a neglected though curious point in the history of the latter productions. M. Civiale has made some researches with the view of clearing up several obscure facts, and has assembled together 166 cases, from an analysis of which it appears that the nucleus of the stone was formed in 32 cases by needles or pins; in 21 by bougies or catheters; in 14 by pieces of wood; in 13 by bullets; in 24 by fragments of bones, pipe stoppers, barometer tubes, or stems of plants; in 14 by the beards of barley or hairs; in 4 by pledgets of lint, and finally by rings, nails, fruit-stones, needle-cases, &c.

The greater part of the above cases present several interesting points, but we must confine our notice to those of recent date.

Pins or needles are the foreign bodies which most frequently serve as nuclei for stone. This probably depends on the facility with which they present themselves to a certain class of depraved individuals, although it is difficult to conceive in what manner females, more especially, can satisfy their passions with such instruments. A few needles, of from five to six inches in length, remained a considerable time in the bladder without having their points covered with calculous matter, and in a few cases only did they penetrate the bladder, vagina, perineum, &c.

The formation of calculi upon bullets, and other foreign bodies of a similar nature, gives rise to several physiological considerations of importance. In many cases these bodies have passed into the bladder through passages which the surgeon would never dare to traverse with the knife, and what is more remarkable, without producing, in many cases, any notable disorder or inconvenience. Thus, for example, pieces of wood from three to seven inches in length, bullets, &c., have remained for years in the bladder without giving rise to the insupportable pain, necessity of frequent micturition, &c., which usually attend the presence of foreign bodies in that viscus.

The introduction of the nucleus is either accidental or intentional. In the former case the foreign body has found its way into the bladder in consequence of a wound, of a fall, of some fistulous communication

between the intestine and bladder, or finally through the fault of the surgeon; in the latter case it, generally speaking, has been introduced by the patient himself, sometimes for the purpose of relieving a retention of urine, or pushing back a calculus; sometimes in a fit of momentary derangement; but most frequently in consequence of depraved and lascivious ideas. The effects produced by the foreign bodies in the bladder are extremely various. Sometimes they generate the highest degree of suffering and pain, which terminate rapidly in death; in other cases they seem to be scarcely felt by the organ, or the inconvenience which they occasion is purposely concealed by the sufferer.

In a therapeutical point of view the presence of these foreign bodies in the bladder is a matter of much interest. From the table to which we have already alluded it would appear that in 12 cases only, of the 166, they were discharged spontaneously either from the bladder or by an artificial passage. This is a curious circumstance, when we consider that in many cases the bodies themselves are small, and of a rounded form. In 64 cases the operation of lithotomy was performed; the difficulty of the operation depending much on the size and shape of the nucleus of the stone. In 26 cases the foreign bodies were extracted through the urethra, without the aid of a cutting instrument. The majority of such facts is recent and connected with lithotrity. M. Civiale has already published six cases in which he has extracted with success two elastic bougies, a bean, a pea, a stem of a plant, and a piece of straw. In his present communication he details two more cases; in one of which he extracted a fragment of a waxen bougie; in another a portion of a barometer tube about three inches in length. —*French Gazette*, April, 1838.

MODE OF OBTAINING CREOSOTE.

The following is an economical method of obtaining creosote, proposed by M. Cozzi. A quantity of tar is distilled in an alembic, and the products collected in a cylindrical vessel half filled with water. The products are acetic acid, eussion, parafin, and creosote, which latter is recognised by its specific gravity. The impure creosote is isolated from the other products by means of a syphon, and on this being done sulphuric acid, weakened with one-half water, is added; the creosote now mounts to the surface of this fluid, which is warmed by an admixture of boiling dilute sulphuric acid, and the supernatant fluid is drawn off and placed in an open-mouthed bottle, one-third filled. This is exposed to the air for three days, and the product is again distilled, when a reddish fluid is obtained. The latter having been treated thrice in a similar manner furnished pure creosote, limpid as water, of 1.007 specific gravity, and boiling at 205° R.—*Jour. de Chem. Med.*, May, 1838.

UNIVERSITY COLLEGE HOSPITAL.

Sir William Molesworth has recently presented a donation of thirty guineas to University College Hospital, accompanied by a letter, in which he expresses his sense of the "pleasure and instruction which he obtained in witnessing the experiments of Dr. Elliotson in Mesmerism," and his confidence "that the researches now being made by Dr. Elliotson will add considerably to our knowledge of the phenomena of Nature, extend the bounds of science, and afford explanation of numerous facts previously inexplicable."

THE LATE DR. HARRISON.

To the Editor of The Lancet.

Sir:—I have been acquainted with the late Dr. Harrison ever since the year 1792, he having brought me up in the profession from that date; and, moreover, for the last seven years I have been his partner, and I must say, in contradiction to the phrase, "somewhat impaired, by its irritation, the faculties of his mind," used in your sketch of his life, which you did his family the honour of giving in your very valuable Journal, No. 768, that I never observed anything of the kind, as his writings I believe prove. Trusting you will cast off this imputation so undeserved by the worthy and much-lamented Doctor, who died at the great age of 82 years, you will much oblige his family, and your very obedient humble servant,

John B. Serny.

6, Golden-square, May 24, 1838.

Tubercles.—It has not yet been proved that the presence of tubercles in the lungs of children, even to a considerable degree, presents a contraindication to the performance of capital operations. M. Rufz has seen amputations of the leg and thigh in children, succeed very well, although persons well exercised in the practice of auscultation had discovered tubercles in the lungs.—*P. H. G.*

Mr. G. Mitchell is informed that Mr. Wakley was not at the Poor-Law Committee on Tuesday. An alarming illness in his family has prevented his attendance at the House of Commons since Monday last.